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## DOES MENIÈRE'S DISEASE OCCUR IN HORSES?*

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We know but little of the neurotic disorders of the domesticated animals, and are probably correct in inferring that they are very few in number, as compared with those affecting mankind. To account for this difference, we might invoke the extremely artificial life imposed upon our species, and especially upon dwellers in large towns; the highly-developed state of the nervous system, and the strain—mental particularly—to which it is subjected; the deteriorating effects of certain morbid conditions upon it—chiefly those due to Syphilis, Alcoholism, and Gout—as predisposing, if not immediately exciting, causes of various neuroses of a more or less serious character which find a prominent place in text-books on human pathology. Mental diseases veterinary surgeons have seldom indeed to contend with in animals, unless it be vicious temper, due to mismanagement, rarely to natural defect.

Therefore it is that the list of neurotic affections known to us is indeed small, and attracts but little attention. But these may be more numerous than we suspect or realise, for we labour under a great disadvantage in several respects in dealing with animals, and more especially in their not being able to describe their feelings by articulate sounds, when suffering from pain or inconvenience; and also from their being generally under our observation for only very brief periods, during which it is not possible to

* Read before the Central Veterinary Society on May 7th.

note everything that might lead us to form anything like an accurate notion of what may be amiss—symptoms of a morbid condition not being always present in the same intensity or form, and our means of investigation being generally exceedingly limited and imperfect.

For these reasons it is that the vertiginous disorders of animals are badly defined, and in the horse more especially are usually ascribed to two or three causes—as indigestion, cerebral tumour, or deranged circulation in the nervous system. But the observation of two cases which occurred in my own experience, inclines me to the belief that animals may suffer from vertigo due to some derangement in the auditory apparatus, similar to what occurs in man in what is known as "Menière's Disease," or, technically, "Labyrinthine Vertigo"—an affection characterised by sudden attacks of giddiness, which are preceded or accompanied by noises in one or both ears.

As described in medical text-books, the commencement of one of these attacks in a person is marked by a sudden buzzing or humming sound in one or both ears—usually loudest in one. This is soon followed by vertigo, which may be either objective or subjective; or the patient may experience a sensation of falling, generally in a forward direction, but sometimes backwards or to one side. The individual reels and clutches at neighbouring objects, but rarely falls; though occasionally he may do so, or in severe cases may be thrown violently to the ground. There is some doubt as to whether there is ever loss of consciousness; if there is, it is only momentary, as the patient can always give an exact account of his sensations after the attack is over.

The attack usually lasts a few minutes, and passes off gradually, leaving the patient deaf and with noises in the ears. Towards the end of the seizure he is pale, with a cold, clammy skin, and often experiences nausea, or even vomits. Lateral nystagmus is sometimes present during the attack, and apparent movement of objects from side to side is complained of. Subsequent attacks are liable to come on at varying intervals, and are generally announced by an increase in the tinnitus or ear-noise, which is generally more or less present. Indeed, a shrieking or a whistling noise is a common precursor of an attack. The intervals between the seizures gradually become shorter, until the patient is reduced to a state of permanent vertigo, liable to exacerbations. The deafness gradually becomes more marked and the tinnitus less observable. In some cases a spontaneous cure is effected when the deafness becomes absolute, the vertigo then disappearing. It is stated that vertigo, tinnitus, and deafness, when combined in one person, generally indicate an affection of the auditory

labyrinth, either from actual disease—inflammation or hæmorrhage —or from disease of the middle ear causing pressure on it; but it is also admitted that obstruction of the Eustachian tube or of the external auditory meatus, as by the accumulation of cerumen, may give rise to the same symptoms.

It must be noted, however, that some medical authorities do not regard Menière's disease as a severe form of Labyrinthine Vertigo, but rather as a distinct affection. Acording to this view, it is characterised by a sudden and severe attack, such as that just described, in a person who had no previous ear disease. The seizure may never recur, and the disturbance is nearly always confined to one ear; while the deafness is intense. The tinnitus and giddiness diminish or cease after the attack, and there is no evidence of disease of the middle or external ear. In Labyrinthine Vertigo, on the other hand, it is asserted that there is usually pre-existing ear disease and severe tinnitus, with more or less deafness; the attacks are less sudden and more frequent, and the giddiness is not so great, but it is more chronic. Fagge believed that in true Menière's disease, there is no affection of the labyrinth or cochlea of the ear, but some disturbance of the centres for hearing and equilibrium.*

Diseases of the ear are not common in our patients, for with the exception of the dog and cat, in which the external ear is frequently in a morbid state, we rarely have derangements in this organ brought to our notice. Yet it is on record that affections of the external ear will induce symptoms in the dog and cat, analogous to those described as indicating the existence of Menière's disease or Labyrinthine Vertigo in man. Mégnin was the first, I believe, to direct attention to the fact that acariasis of the external ear will often produce epileptiform fits in cats; and Nocard has noticed the same result from the same cause in dogs. My friend, Mr. A. J. Sewell, M.R.C.V.S., informs me that in his experience cats very frequently suffer from the presence of a small parasite, about the size of an ordinary acarus, in their ears, and which sets up such "tremendous" irritation that the poor animal will suddenly shake and scratch its ears, and when walking will go as if intoxicated, often falling on its side. Mr. Sewell has found the same parasite in dogs' ears.

I could detect nothing of this kind in the ears of the horses whose symptoms I will now refer to, and which appeared to me to bear so close a resemblance to some of those that characterise Menière's disease, that I have been induced to bring the question before you as to whether the equine species suffers from it. The affected horse unfortunately cannot describe his sensations, and

* Fowler's Dictionary of Practical Medicine, p. 511.

we are therefore left in doubt as to whether they are the same as in man; but, judging from appearances, we might conclude they are at least somewhat similar.

The first case to which my attention was directed, occurred so long ago as 1865, when stationed with one of my old regiments—the 3rd Hussars—at Aldershot. The horse—a dark brown gelding, rather old, if I remember aright—was off-side wheeler in the regimental drag, and had been bought at an auction in London. The officer who usually drove the drag asked me to examine the horse's left ear, as he said that when on the road the animal began to shake his head and incline it to the left, as if a fly had got into the ear and could not be dislodged. On several occasions the drag had to be stopped, as the horse staggered towards the left side and could not go on. On one occasion, when urged to proceed, the horse became greatly excited and fell, and it was some time before he could be sufficiently recovered to bring him home. A careful scrutiny of the external ear, inside and out, could discover nothing to account for the symptoms; the teeth were examined, as well as the jugular veins, but they were normal. Another bridle was worn, and the horse's place in the coach changed, but all was of no avail, and as the animal gave so much trouble, he was sold. The shaking of the head and vertigo were ascribed to Megrims.

The next case presented itself in a horse of my own, when with the Royal Engineers at Chatham, in 1876. The animal was an Irish hunter, seven years old, which I drove in double harness, as the hunting season was over when I bought him. He ran on the off side, and was a showy and steady horse at work. Soon after I began driving him, I found he was seized in the same way, when on the road, as the other horse had been.

When going along quietly, he would suddenly give a start, become excited, shake his head rapidly and convulsively towards the left side, carrying it much as a horse does when a twitch is severely applied to one of its ears, or as if something very irritating had entered the ear. At the same time, he pressed against the pole on the near side with such force as to drive the other horse off the road into a hedge, and then fell. The groom was quickly at his head, and we released him from harness. He did not appear unconscious, but stupefied, and his eyes moved as if he were much startled. In a few seconds he got up, but was so much depressed and agitated that we did not put him again to the carriage for some time. He would not drink water, which was procured from an inn not far off; and bathing his head did not appear to benefit him much. Next day I made a most particular examination of him, but could detect nothing whatever to cause the peculiar and alarming symptoms. The condition was not

what is commonly known as Megrims, neither was it Epilepsy, several well-marked cases of which I had previously seen. The horse was otherwise in excellent health and condition.

He was put under treatment, as it was imagined his digestive apparatus might be at fault, and his allowance of oats was reduced. But this had no effect, as the next time he was driven he exhibited the same symptoms; but he was timeously pulled up, and the groom got to his head to support him; and though he had pushed the near side horse across the road, yet he was prevented from falling. This occurred several times at intervals of a few days.

Whether he was liable to these attacks in the stable, I could not learn, as the groom did not observe them there; and as I did not use him in the saddle, I am in doubt as to whether he would show the peculiar symptoms when ridden. At any rate, the condition was so alarming, and even dangerous, that I was obliged to dispose of him, as I could not afford to destroy him and make an autopsy, much as I desired to do so.

Under the heading of "Irritation in Horse's Ear," a correspondent to *The Field* of May 2nd of the present year, writes: "Can any of your readers tell me the cause and the best treatment for the above? The horse is seven years old, and appears perfectly healthy; but about six months ago he first showed signs of irritation by shaking his head and putting his near ear down. The last month the irritation has increased, and in harness now he will stop, shake his head, and twitch his ear severely. It more frequently appears when he is warmed up, or when meeting a cold wind. When riding it affects him just the same, but when I see it coming on I rub gently behind the ear, and in a minute or so it passes off. I have tried washing the ear with carbolic acid, and have also applied lead liniment. There is nothing to be seen, the ear being perfectly clean. A local veterinary surgeon has examined him, but cannot detect the cause." The writer subscribes himself "Puzzled."

From the symptoms I have given of Menière's disease in man, and those I have detailed as offered by the two horses which came under my own personal observation, it will be seen that there is some reason for assuming that animals may be affected with Labyrinthine Vertigo, though what its immediate or remote causes or termination may be in them I cannot say. These certainly were not cases of ordinary vertigo. The sudden excitement, as if startled by a loud noise or sharp pain; the persistent and increasing shaking of one ear, and inclination of the head to the same side; the tendency to turn round or push to that side; the stupefied and alarmed look, and the falling on that side if not quickly pulled up and supported, are indications that

go, as far as is possible in dumb animals, to support the opinion I have ventured to express with regard to the existence of Menière's disease in other creatures than man.

Doubtless many members of the veterinary profession have witnessed such cases and been struck by their peculiarity, but I can find no mention of any attempt to assimilate them to, or compare them with labyrinthine disorder in the human species. Disease of, or derangement in, the organ of hearing in horses, must be exceedingly rare, though they are frequent in dogs and cats; and, as has been mentioned, acariasis of the external ear in these animals occasions symptoms not unlike those described. But in the horses I have alluded to, there was nothing whatever discovered to account for the attacks to which they were liable. Whatever the cause may have been, it was not always in operation, as the fits only came on at uncertain periods, and, so far as could be ascertained, during work.

The function of the semicircular canals of the middle ear is doubtless closely connected with movement, or the consciousness or co-ordination of movement, as Flourens long ago demonstrated; for section of them causes loss of equilibrium and disturbance of locomotion; and if this section is made only in one ear, then the disturbance in equilibrium and movement occurs on that side. In the cases I have described, if the cause was really located in these canals, it may have been variation of pressure on the fluid they contain, due to some disturbance in the blood circulation or modification in the temperature or amount of air in the Eustachian tubes.

However this may be, certain it is that we have here a form of vertigo that has not been, to my knowledge, described; and whether it is altogether neurotic, and due to some morbid condition of the cerebellum, or is the consequence of some derangement in the auditory apparatus, is a matter for investigation. I cannot think that such cases are very rare, and it is possible for some one to have the opportunity of making a careful examination of a living horse so affected, and to have the advantage of a skilfully-carried-out autopsy upon it, so that we may learn the true pathology of this condition.

With regard to treatment, I am sorry to say I cannot give any information; for until we can ascertain the cause of the malady, any remedial measures adopted must be more or less of an empirical nature. Those applied to man cannot be utilised for the horse to the same extent. It may be mentioned, however, that with man large doses of quinine have appeared to give good results. But until we understand the ætiology of the malady, we must remain in the dark as to the proper means to be prescribed for combating it.

# A PRELIMINARY NOTE ON THE NATURE AND PATHOLOGY OF THE DISEASE KNOWN AS "SURRA" AFFECTING HORSES AND MULES IN INDIA.

BY GEORGE RANKING, M.D., CANTAB., SURGEON-MAJOR, 5TH BENGAL CAVALRY.

THE importance of the investigation which forms the subject of the present paper is sufficiently evidenced by the statistics of Surra in this regiment alone, though these figures only show a very small proportion of the cases of Surra which occur yearly in India and Burmah, causing a loss to Government which may fairly be termed enormous.

In 1889 no less than fifteen horses and thirteen mules of this regiment died of Surra, representing a loss of nearly eight thousand rupees to the (*Chanda*) fund. In 1890 the loss was five thousand rupees, owing to the death of eleven horses and seven mules.

Losses like this demand an investigation into their cause, and it was in the hope of being able to identify the cause and obtain indications for rational treatment that the research was undertaken. I must premise that in calling the disease which I have been investigating Surra, I have relied upon the diagnosis of the veterinary surgeons, under whose treatment the animals were at the time I undertook the research. They were agreed that the disease was true Surra, and this diagnosis was borne out by its fatality.

*Mortality from Surra.*—Surra has hitherto proved invariably fatal, not being amenable to any treatment adopted up to the present time.

*Symptoms of Surra.*—Its symptoms may be briefly described as a progressive anæmia with lassitude, emaciation, conjunctival petechiæ, abundant urine, and ultimately death from sheer exhaustion. The urine in most cases is albuminous, and in one fatal case which came under my own experience, contained a pigment which, I have no doubt, was urohæmato porphyrin, though I was unfortunately not able to examine the urine by the spectroscope. I do not, however, propose in the present note to go into any detail of the abnormal appearances observed, my object being simply to give a brief account of the research instituted, with a broad statement of the results arrived at, reserving the full account of the various points noticed, with the deductions based upon them, for a future paper.

*Pyrexia in Surra.*—The course of the disease in Surra is characterised by a fever of a remittent or intermittent type with

irregular exacerbations, and not often rising beyond 104° F., falling, however, as low as 98° F. I am informed by H. Hayes that the normal temperature of the horse is 100·4° F. The highest temperature may be followed by a gradual fall, and rise again gradually till, after an interval of five or six days, the maximum is reached, when it again falls to be succeeded as before by a gradual rise; or in another case there may be diurnal exacerbations, the temperature chart reminding one forcibly of malarial fever in the human subject. I have before me ten charts of cases of Surra in the horse and mule which all conform to one or other of the above descriptions.

*The blood in Surra.* — If the blood of a Surra animal be examined with normal salt solution microscopically, the red corpuscles will be seen to present very characteristic changes.

*Echinosis.*—At one period they present a peculiar appearance, to which I have given the name of echinosis, for the reason that the individual corpuscles have lost their normal contour, and resemble nothing so much as an echinus. This echinoid condition will be referred to later on and an explanation of its cause offered.

*Plasmodic.*—At another period, or in some corpuscle at the same period, the interior of the corpuscle is seen to be occupied by a foreign substance presenting amœboid movements and of very various form, varying from circular through stellate and pileate forms to a veritable bacillar form, straight, curved, or spiral. These bodies, I take it, are comparable to, if not identical with, the *plasmodium malariæ* of Marchiafava and Celli,* as they correspond in all particulars, both of morphology and development, with those organisms. In one specimen only have I found the spirillum (*Hæmatomonas*), (*Spirochæt*), hitherto considered to be the effective cause of Surra,† whereas the organism, whose nature is now described, is invariably present and conforms in all particulars to the requirements of Koch's postulates, that is to say :—

(1) It is found in the blood.
(2) It can be isolated and cultivated.
(3) The pure cultivation reproduces the disease.
(4) The organism is again found in the blood.

*Life History of the Parasite.*—I wish to make it clear that I do

* Celli, Marchiafava, and Weyl "On Roman Malarial Fever, especially in summer and autumn." *Berliner Klin. Woch.*, November 3rd, 1890.

† On the lately demonstrated "Blood Contamination and Infective Disease of the Rat and of Equines in India."

H. Vandyke Carter, "Scientific Memoirs by the Medical Officers of the Army of India," Part III., 1888.

not lay claim to any finality in the remarks I am about to offer on the developmental history of this organism, as I feel I have not had a sufficient number of cases to warrant me in making dogmatic assertions; I merely put this forward as a statement of experimental results liable to such modification or confirmation as a more extended experience may lead me to adopt.

*Echinoid Stage.*—The blood then of a Surra animal, when in the stage of "echinosis," contains red cells, to the surface of which are adherent, or in the substance of which are embedded minute circular organisms varying in size from ·0004 *mm.* to ·002 *mm.* in diameter. [These and all future measurements are referable to Zeiss's 1/12 Hom. *Imm. lens*, with No. 3 micrometer eye-piece and tube fully drawn out.]

In some stages these circular organisms, which I shall for the future call "spores," are seen free in the plasma in variable quantities exhibiting actively motile properties. They attach themselves to the surface of the red blood discs, giving rise to the "echinoid" corpuscles of early echinosis.

*Plasmodic Stage.*—After a variable time the cells lose their *echinoid* appearance and become *plasmodic*, that is to say, they become occupied by the bodies mentioned above, and compared to the *plasmodium malariæ*. These plasmodic corpuscles are of irregular contour in most instances, only retaining their disc shape in those cases in which the plasmodium is circular, in other cases assuming more or less the shape of the plasmodium contained in them.

*Spore Stage.*—After a further period the plasmodia break up, undergoing rapid fission into "spores," ·002 *mm.* diameter which escape from the blood-cell causing "late echinosis," and become free in the plasma. The changes must be observed on a warm stage.

The red cell having lost the spores, almost immediately resumes its normal contour, but only for an instant, as it rapidly loses all colouring matter,* and becomes translucent and all but invisible. These decolourised red cells may again be brought into view by adding a little watery Spiller.

If now a slide, in which these appearances have been watched, is treated in the usual way for staining spores, it is seen to be full of minute deeply-stained spores in a fibrinous reticular stroma, to the meshes of which the spores adhere.

In addition to the above organisms, the following objects are seen with varying frequency:—

* This explains the profound anæmia which is so prominent a feature in the disease.

(*a*). Colourless wandering masses of plasma ovoid in shape and beaked or flagellate at either pole, measuring ·004 *mm.* in diameter. These stain with Spiller.

(*b*). Ordinary leucocytes.

(*c*). Large irregularly globose leucocytes, mono- or poly- nuclear, in many cases containing the above beaked plasmodia (*a*), and frequently full of motile spores. These are evidently phagocytes.

(*d*). Mulberry-shaped globose masses of yellow spores. These I have reason to believe are aggregations of spores in phagocyte cells, as they are more common when the animal is evidencing a resisting power against the disease, and may be observed in various stages of development.

(*e*). Pigment granules solitary or in phagocyte cells.

(*f*). Fusiform bodies ·016 *mm.* in length, yellow, with white contents separated into two triangular segments, with the bases centrally placed, resembling the bodies figured by Golgi as one stage in the development of Laveran's parasite.

*Cultivation of the Organism.*—If a drop of blood containing either "spores" or "plasmodia" (*i.e.*, echinoid or plasmodic corpuscles) be introduced into a nutrient medium, such as agaragar peptone, in a very short time, twenty-four to forty-eight hours, the blood loses its colour and gradually a whitish yellow growth, with a foliated margin, takes place on the surface of the medium. This growth, when examined under the microscope, is found to consist of a felted mass of bacilli, the individual bacillus measures from ·002 *mm.* to ·005 *mm.* in length by ·0015 *mm.* in breadth, the ends are rounded and the bacillus is actively motile. It is so like the hay bacillus that I rejected my first cultivation, thinking that it was accidentally contaminated. Spore formation takes place either in the centre or at either end, the spores are bright yellow, glistening, ·002 *mm.* in length, and nearly as broad as the bacillus itself, which, when sporing, is about ·003 to ·006 *mm.* in length, becoming often fusiform. The spores become free and reform bacilli in the usual way. If a specimen of blood, free from spores, is taken and some of the spore culture added to it, the spores are seen to attach themselves to the corpuscles.

*Potato.*—On *potato* the organism develops a brownish yellow layer with a reticulated appearance eventually forming a slimy layer with a peculiar earthy smell consisting of bacilli and spores.

*Milk.*—On *milk* it grows rapidly into long leptothrix forms, the segments of which are shorter and broader than the individual bacillus which has the usual appearance.

*Bouillion.*—In *bouillion* the bacillus does not thrive, it grows longer and thinner and does not produces spores readily, and only at one end.

*Inoculation of the Organism.*—

***Frog.***—Frogs inoculated with pure culture containing bacilli and spores.

The bacilli were rapidly got rid of from the blood by phagocytosis, and numerous phagocyte cells could be seen heavily charged with spores. The red blood cells also became plasmodic; inoculation of this blood into agaragar peptone reproduced the bacilli a fortnight after the original inoculation.

*Pigeon.*—Pigeons appear to be refractory, no echinosis was observed, nor did any corpuscle become plasmodic, but very many "mulberry" bodies were observed.

*Rabbit.*—Rabbits appear to be very susceptible; subcutaneous inoculation of spore culture produced a remittent fever with the characteristic appearance in the blood and reproduction of the bacilli from the blood when inoculated on agaragar peptone on the fourteenth day. The rabbits, however, recovered with one exception, which died days after the temperature had become normal and inoculation of the heart blood gave negative results.

*Goat.*—Inoculation of goats was attended with no result.

All these experiments were duly controlled.

Finally, I wish to put on record that the above description applies in its entirety to ague, from the blood of which disease upon culture, an identical bacillus can be obtained, and the blood of which conforms in its pathological appearances with that of Surra.

*Malarial Infection the Cause of Surra.*—I am therefore of opinion that Surra is a disease of malarial origin comparable to ague, from the evidence which I have endeavoured to briefly submit in this paper.

Further, this view or the pathology of Surra is borne out both by the period of prevalence of Surra which corresponds with that of ague, and also by the results of treatment; quinine on full doses appears to control the disease, supplemented by general measures to combat the anæmia and weakness consequent on prolonged illness, chiefly by milk, iron and arsenic. Of the four cases which have occurred since I took up this subject, one was moribund when first seen and was shot as a hopeless case; one died of Tetanus, and the other two are rapidly recovering.

I believe that the facts now put on record will, if followed as guides to diagnosis, enable the disease to be detected in the earliest stages when it may be rapidly cured. The reason why Surra has hitherto been so uniformly fatal, I believe to be simply because its real nature was not apprehended and the disease allowed to run on till the vital powers were sapped by the constantly recurring fever.

I would further put on record that, as I have found the spores of this bacillus in well water, it would appear that this is one mode of its access to the body; it is however evidently so widely spread in the air that I doubt, whether much is to be hoped from precautions, such as boiling the water used for watering the animals, the more so as the spores resist prolonged exposure to boiling temperature. Still where Surra is prevalent this precaution and the prolonged exposure of all dry fodder to high temperature should certainly not be neglected, as an accessory measure.

My research is still going on, and I hope in the course of a few weeks to be able to publish the results *in extenso*, bearing as they do both upon Ague in the human subject and its equivalent in the animal hitherto known by the name of Surra.

The relation which appears to be indicated between the Plasmodium Malariæ and the Bacillus Malariæ (Klebs) will be seen to be not the least interesting part of this investigation.*

(The following observations are from Veterinary-Surgeon, First Class, D. C. Pallin, Lucknow.)

The cases referred to in this paper were under the care of Veterinary Surgeon Maxwell and myself.

We worked hard with a view of getting rid of the disease, and also in trying to effect a cure in the cases subjected to treatment. In the former, I imagine we had some success, *i.e.*, by reducing the number of admissions compared with those of last year; while with regard to the latter, our efforts appeared to prove a complete failure, inasmuch as none of the cases for which we prescribed, ever made the least stride towards recovery.

Two cases, (viz., a horse and a mule) the last to become affected, are still alive, and some hope is entertained of their recovery. They are, however, much emaciated. Petechiæ still exist, but fever has been more or less absent for several days. These cases were, with the sanction of the Officer-Commanding 5th B. C. (Colonel Vaurenen), placed at the disposal of Dr. Ranking for research, he having every appliance together with a most excellent laboratory.

* I have only occasionally found the flagellated organism of Vandyke Carter and only the above-mentioned form of Laveran's sickle-shaped bodies, either in the blood of Surra animals or in that of ague of which I have examined some hundreds of specimens. Once only have I found what appeared to be the rosette forms described by Golgi.

Since the above was in print, I have obtained further evidence in support of the opinion I have formed as to the identity of the Plasmodium Malariæ and the Bacillus Malariæ. I am aware that this is an opinion which will be severely criticised, as the Plasmodium has hitherto been considered as a protozoon, but I see at present no other possible deduction from the facts observed.

Dr. Ranking at once discovered organisms in the blood, corresponding in every particular to those found in the human blood of a patient suffering from Ague; thus leading him to believe the disease is entirely malarial, and quite upsetting the theory of water, grass, etc.

With the patients referred to, treatment was carried out under Dr. Ranking's directions, and consisted of very large doses of quinine frequently given in quantities of milk. As to the beneficial results, there can be no doubt, at the same time, the disease being on the decrease, the animals may not have been quite so severely attacked.

In my report to Government, I referred to two dogs that came under my notice, which I believed to be suffering from Surra. Both these animals died, but a fresh case coming under my observation within the last few days, I took it to Dr. Ranking's laboratory, and like organisms, giving similar results, were found in its blood. This animal has also been getting large doses of quinine, (in conjunction with cod liver oil), and although not improved, it appears to be holding its own.

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## DIABETES MELITUS IN THE HORSE.

BY J. A. NUNN, D.S.O., F.R.C.V.S., PRINCIPAL, LAHORE VETERINARY COLLEGE.

THE patient, an aged cob gelding, had been taken by the owner to a hill-station in the Himalayas for the summer. The season had been very cold, with a good deal of rain, and the animal was frequently exposed to the wet. Previously to going up to the hills, the horse had been many years in the plains of India and had been in good condition, but had very much fallen off lately. He was brought down from the hills in October, and although treated by various persons, from native grooms to native cavalry officers, with various sorts of remedies, he had been going on from bad to worse. The animal was brought to the Lahore Veterinary College on December 25th, 1890, in a very thin, emaciated condition, and so weak that he was unable to work; in fact, the owner was intending to have the horse destroyed. The appetite was good, but the molar teeth were very irregular, and in the fæces were undigested grains of barley and "gram." The urine was dark in colour, specific gravity 1,060, and showed the presence of a considerable quantity of sugar with Fehling's test. The teeth were filed down and the horse given an aloetic purgative. December 27th, the specific gravity of the urine had increased to 1,070, with sugar present, under Fehling's test. The

horse was given pulv. opii ʒss, soda bicarb. ʒss, morning and evening in the food, and the nitro-muriatic acid ʒss in the water daily. Bran diet, with green wheat and green grass, were ordered, and light walking exercise.

On January 10th the animal was treated for a slight attack of dyspepsia and congestion of the liver, but was discharged from hospital on January 22nd. Was seen again on February 12th, when he had much improved in condition; the specific gravity of the urine 1,040; sugar still present, but in smaller quantities. The horse was used by the owner for light work, but the green wheat diet had caused great relaxation of the bowels, and was stopped, green grass being substituted; the medical treatment was continued.

At the present time the horse is in fairly good condition, and is being regularly used by his owner. In my experience Diabetes melitus is a rare disease in the horse. One case is mentioned by Robertson, "Equine Medicine," page 322, and beyond this I can find no record of it.

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## TEXAS FEVER.*

BY M. B. MCCURDY, ONTARIO VETERINARY COLLEGE, TORONTO.

THE subject of inoculation is revolutionizing the scientific world of to-day. It brings before our notice many of the contagious diseases of the otherwise uncontrolable type, in a new and highly encouraging manner.

It widens the horizon of the scientific investigator, and gives him an impetus for still more ardent labours.

Many men have won fame for themselves by their investigations of various contagious diseases.

There remains, however, a field far vaster than the one over which we have passed, for the man who chooses this line of study.

One of the most prominent diseases awaiting thorough investigation is that dread malady commonly known as Texas Fever.

This disease causes an immense loss yearly in financial circles.

It prevents the shipping of Southern cattle north, without the expenditure of a large amount of time and money caused by quarantine regulations; also the shipping of northern cattle south, due to the large death-rate; thus preventing the improvement of the Southern cattle by the infusion of the pure blood of the north.

Texas Fever may be said to be a disease due to a specific germ, having a specially degenerative effect on red corpuscles, character-

* Read at a meeting of the Toronto Veterinary Medical Society.

ized by well-marked lesions, primarily in the liver, secondarily in the spleen and kidneys, interfering materially with their functions.

There formerly existed many theories as to the manner in which the virus is carried.

The saliva theory has been proven false by actual experiments. Cattle kept in separate pens but in such close connection that they could reach each other over the pens and even eat out of the same boxes with infected cattle do not become inoculated with the germs.

This same experiment also disproves that the germs may be carried by the breath.

The most plausible theory and the one now generally accepted, is that the germs are eliminated from the system by means of the bowels and kidneys, and therefore are deposited on the ground by means of fæces and urine; also that the germs must enter the system by means of the mouth or direct inoculation to produce the disease.

Cattle gather up some of the manure in their feet, and are thereby capable of producing the disease wherever they may chance to walk.

With the passing of fæces and urine a vast amount of territory may be easily infected.

A possible but not very ready means of carrying the disease is by food, ticks, hides, and attendants.

Be the manner of conveyance what it may, the facts remain—1st, that all cattle from infectious land taken north, infect the northern pastures; 2nd, that this virus is capable of producing the disease in northern cattle up to the time of frosts.

It may also be remarked that there is a continual increase in the virulence of the germs, after being deposited on uninfected territory, as shown by the fact that cattle placed on newly infected lands late in the season die in about one-half the time of cattle placed there early in the season.

Just as cold is detrimental to the growth and development of the germ so is warmth and moisture conducive to its fecundity and virulence.

A case is reported from Southern Cal. where the disease got into a herd, but did not do much damage. The disease was thought to have run its course. A heavy rain fell, followed by excessive heat. In a few days the cattle commenced dying with very acute symptoms, and nearly the whole herd succumbed.

The drying heat is necessary. So long as a pad remains moist, soft, and cohesive there is no danger of the disease being produced.

One of the most striking features of the disease is the immunity which cattle born upon infected lands enjoy.

The germs are present in all animals upon such ground. In unborn calves the germ is also invariably present, as has been shown by experiments.

Northern cattle have been inoculated by pulp from liver or spleen of southern fœtus, and produced typical Texas Fever. This shows that the fœtus is inoculated by the dam, long before it is given birth.

This seems to explain how southern cattle carry the germs and yet remain apparently healthy.

By a gradual process the system of the fœtus is charged with the germs of disease. The system becomes tolerant to their presence, as one's system may become tolerant to the use of tobacco, alcohol, or opium.

When the calf is born it has already received immunity from the disease by inoculation, and is therefore not susceptible to the attacks of the germs, though it may consume them every day, and by continual reception of germs it retains its immunity through life.

As there is no process in the Southern States by which the germs are destroyed, it can be easily seen how the pastures remain in a perpetually infected state. If these cattle are taken north it can be understood how they carry and distribute the disease, though in apparent good health themselves.

Experiments of Paquin, State Vet. of Mo., go to show that if southern cattle are kept in quarantine for about thirty days they then become incapable of communicating the disease to northern natives.

Other experiments show that after about one year's time they lose their immunity, and are therefore susceptible to the disease themselves.

This clearly shows that immunity is stopped as soon as the system clears itself of the disease-producing germs. So long as they are in the system the animal enjoys complete safety.

Experiment seems to show that the germ undergoes a secondary process outside the body of the animal.

When southern cattle are put in contact with northern ones, the natives do not become affected for about thirty to fifty days, whereas if natives are taken south and put on permanently infected pastures, they contract the disease in about twelve days.

This is explained by concluding that permanently infected pastures always have germs in all stages of life. In the other case it requires twenty-five or thirty days for the germ to undergo the essential process to produce its virulence.

The question has been raised as to whether natives can transmit the disease to natives.

Paquin has proven by inoculation that they can. However, it requires a much larger amount of virus than if taken from southern soil or southern cattle.

The reason we do not have the disease reproduced in our country is, that it requires too long a time to undergo the various processes, and before the various changes have taken place the frosts are here and destroy the vitality of the germs.

This is of inestimable value to the cattle man of the northern states. Were it not for this, if the disease got into a district there would be no stop to it until a large percentage of the northern cattle were dead.

Their places would then have to be taken by the "longhorns" of the south.

A remarkable thing, according to Salmon, is that the line of permanent infection is gradually extending northward.

The period of incubation is from eight to twelve days.

But the average time from exposure till the disease shows itself, varies from thirty to fifty days on northern soil.

### Symptoms.

Many hours before any external manifestations, the temperature rises from one to two degrees.

During the more acute stages the temperature may run as high as 107° Fahr. Pulse soft and quiet.

Usually the first thing noticed by the attendant is the drooping ears, sluggish gait, drying up of secretions in milch cows, and lameness in one or more legs.

A seemingly peculiar fact is the retention of the appetite and process of rumination for days after the disease has greatly interfered with other functions of the body.

The urine becomes very high-coloured. This is not Hæmaturia, but Hæmoglobinuria, caused by the breaking down of the red corpuscles, setting free the hæmoglobin which is secreted by the kidneys.

At the same time you can notice the passing of bloody fæces, and diarrhœa in many cases.

The animal exhibits great pain, grinding of the teeth, twitching of the muscles of the flanks, and respiration greatly accelerated.

During the last stages the animal may be in a comatose condition. If the brain is directly affected, however, the animal is usually delirious.

Just before death takes place the temperature falls very markedly, sometimes as low as 93½° Fahr.

Anæsthesia sets in. The animal is unable to rise.

Death takes place in from one to seven days after first symptoms.

In very rare cases the temperature may fall, secretions become normal, and the animal recovers in several weeks.

Owing to death taking place so quickly, an opportunity is soon offered for a *post-mortem*, which assists very materially in a diagnosis.

The *post-mortem* lesions vary as greatly as do the symptoms, but some general points may be noted here that are usually seen in a well-marked case of the disease.

The thing that first strikes an observer upon cutting into an animal dead from Texas Fever is the bright-red appearance of the blood. It is very thin, flows like water, and quickly coagulates.

The thin watery condition seems to be due to the lack of red corpuscles.

In health there should be abont five million corpuscles in a cubic millimetre. In this disease there is not over one million, which shows a very great destruction of them.

The flesh presents a bright clear appearance over the whole body, while the fat is of a brownish colour.

The next point is the enlarged spleen, which is usually five or six times its normal weight.

When the capsule is cut, it presents a disorganised mass, sometimes being in a semi-fluid state, and greatly engorged with red corpuscles.

The *greatest* lesions are found in the liver, and its condition may be said to be diagnostic.

It presents a yellowish-brown colour, is enormously enlarged, sometimes weighing as much as twenty pounds, with parenchyma deeply bile-stained.

Under the capsule large yellow streaks may be seen due to .ngorgement of the bile-ducts.

There is also parenchymatous degeneration of a fatty character, with complete injection of the intralobular biliary system.

These lesions show a marked resemblance to those of "pernicious Anæmia" of the human subject.

The gall-bladder is always more or less distended (its walls being hypertrophied), and in some cases is as large as a urinary bladder.

It is full of gall, which sometimes is of a dark yellow, and again of a dark green colour, many times almost black; slightly inspissated in some cases, in others so much so as to resemble boiled starch in consistency.

The principal lesions of the alimentary canal are found in the abomasum and rectum, the mucous membrane of the former presenting a dark red, congested appearance, with ecchymosis and frequently epithelial erosions.

The whole tract shows a state of congestion, but in cases of diarrhœa the rectum is the seat of very severe hæmorrhages.

The *kidneys* always present a more or less congested condition, much enlarged with capillary engorgement and parenchymatous degeneration.

The bladder, usually distended with highly-coloured urine, sometimes weighing as much as twelve pounds.

The *lungs* may be emphysematous, with hypostatic congestion, Pleurisy present in some cases.

In cases in which the animal was delirious before death the brain and spinal cord may show signs of congestion. A rather curious circumstance is, that the disease has never been been known to produce abortion.

Treatment in the curative sense is practically of no avail, although many antiseptics and laxatives have been recommended.

A comprehensive understanding of the pathology of the disease will clearly show that all treatment bestowed on a sick animal is a waste of time and money.

Inoculation of healthy animals is the most rational and scientific manner to look at it in this day and age.

In consideration of treatment by inoculation, reference may be made to the experiments of Paquin, a man who is probably doing more in the scientific investigation of Texas Fever than any other of the present day. He has been experimenting in this line for several years, and has conclusively shown that northern cattle properly inoculated with properly prepared material may be shipped south with impunity.

Forty head of pure-bred Herefords, Durhams, and other cattle were shipped to the Indian territory after having undergone the process of inoculation, which consisted of injecting twenty drops of virus to each head every third day until four inoculations had been given. Each successive virus was stronger than the preceding one. The last was very virulent. The animals were shipped the day following the last inoculation, and reached their destination two days later.

The temperature rose to about 103° Fahr. Of the forty head only one died, and but five or six were slightly affected, but soon recovered.

The previous death-rate on the same land, without inoculation, was from 50 to 75 per cent.

Another lot were treated with three very strong injections and then shipped south, the result being that they contracted a too strong form of the disease. Upon reaching the infected district the disease increased, and consequently they all died.

Then an experiment of a different character was tried. Thirty

head of shorthorns were shipped to Texas without being inoculated first, but with instructions to inoculate before being unloaded. After being inoculated on the car they were taken to pens that had previously been prepared and disinfected. The inoculation was repeated every fourth day for sixteen days. On the twentieth day they were turned out on the worst infected pasture. Not one of the inoculated cattle died of Texas Fever nor even showed any symptoms of the disease. The previous death-rate here was about 60 per cent.

These and many other experiments go to show:

(1) "That susceptible cattle may be purposely inoculated with virus of Texas Fever, and thereby placed in the same relation with that disease as are the cattle born south which become primarily inoculated from their dams."

(2) "That inoculation with too strong virus causing high fever or positive signs of Texas Fever is not a sure protection. But instead is a dangerous practice, and may kill stock directly, or cause such damage in the system, that when exposed to the virus when thus suffering, or soon thereafter, the subjects gradually get worse and die, never having regained their strength."

(3) "That periodical inoculations, beginning with a mild virus and ending with a stronger, is more rational, as being more like the natural process of inoculation of southern cattle, and is in a large degree a protection against Texas Fever."

(4) "That possibly the safest method of inoculation is to complete it on southern soil after shipment, providing there be no exposure to germs during the time of inoculation, particularly at the beginning."

By these experiments and their deductions it can easily be seen how beneficial inoculation is to the cattle raiser.

They also go to show the scientific world what may be accomplished by inoculation as a prophylactic measure.

The *germ* of this disease may be said to be of the bacillar species and the facultative type, assuming various forms during life. This fact accounts for the differences of opinion of various investigators as to its morphology.

The ovoid forms are the ones particularly noticed, but it appears that this is only a transition stage, which finally terminates in the more mature form.

If cultures are prepared from material containing the ovoid forms, they elongate, become surrounded by a gelatinous areola, and break off into two short rods or double and single bodies.

The spherical ovoid forms and short rods are found both in the liver and fluids in zooglea.

At the ends of some germs flagella are noticed, which probably

give them the slow, bending, twisting motion that is often seen in many cultures.

The more mature forms vary in size from 4 m. to 5 m. in length, and 17 m. in width; the ovoid stage, the length is from 25 m. to 3 m., and width about 15 m. They are difficult to stain, but answer most readily to "Johne's fuchsin."

The cultivation has been tried in many different media, such as blood serum, beef broth, agar-agar, egg albumin, potatoes, and oyster "bouillon," but artificial lymph with liver broth seems to be productive of the best results.

This disease, although commonly known as Texas Fever, is not strictly speaking a disease peculiarly propagated by Texas cattle. But it is found in all that country lying west of the Mississippi River, and south of the thirty-seventh degree of north latitude.

The quarantine law says, "All cattle coming from this district must be subjected to an inspection by men appointed for this purpose, and only when pronounced not infectious and perfectly healthy, will they be admitted to the market of northern cattle."

It further states, "If any person shall bring into the State any Texas, Cherokee, or Mexican cattle which have not been kept at least one winter north of the southern boundary of Kansas or Missouri, he shall be deemed guilty of a misdemeanour."

This clearly shows that the law does not recognize Texas as the only infectious district; but as more cattle are brought from Texas than any other State, the disease gets the name of Texas Fever.

This disease is commonly and very wrongly known as an anthracoid disease, and consequently has often been called Splenic Apoplexy and *vice versa*. The distinguishing characteristics are many. In Splenic Apoplexy, the animal dies very quickly, while in Texas Fever they usually linger for a week or more.

The mucous membrane of the eye in Splenic Apoplexy is heavily injected, while in Texas Fever it has a yellow appearance.

Again, the heart beats with violence against the thoracic wall in Splenic Apoplexy, while in Texas Fever it is weak, with pulse frequent.

On *post-mortem* the appearance of the blood alone is enough to differentiate between the two diseases. In Splenic Apoplexy the blood is found to be dark, tarry, incoagulable, as compared with the bright red, coagulable blood of Texas Fever.

In Splenic Apoplexy you do not find the streaky appearance of the liver, as found in the other.

Lastly, the microscopic test is decisive. In Splenic Apoplexy you find the "bacillus anthracis," while in the other you find the ovoid-belted organism of Texas Fever.

## GENERAL REMARKS ON SKIN DISEASES.*

BY R. W. BURKE, F.R.C.V.S., CORRESPONDING MEMBER OF THE ITALIAN VETERINARY ACADEMY, VETERINARY DEPARTMENT, AMBALLA.

(*Continued from page* 248.)

### URTICARIA.

*Syn.*—Nettle-rash, Nettle-eruption, etc.

*General Origin and Course.*—Urticaria is characterised by a flat, patchy eruption of the skin, due to a rapid development of serous exudation into the papillæ and corium in the neighbourhood of capillary vessels. It may be defined as an acute serous dermatitis, which remains serous throughout, and does not lead to cell infiltration. In all cases, the presence of wheals or some equivalent eruption is pathognomonic of the disease.

(1) The local causes are anything which irritates the skin, as the bites and stings of poisonous insects and the hairs of stinging plants, as well as turpentine, which, applied to the skin of the horse when suffering from Colic, etc., will produce sometimes pretty severe local attacks of Urticaria.

(2) Urticaria produced by the irritation of some part of the body internally, and accompanying other irritable affections of the skin, belongs to the group of reflex nervous actions. But this is not clearly determined, the disease being regarded as a general nervous disturbance. Young, full-blooded and well-fed animals are especially liable to the disease. But when it comes on through constitutional causes, then it must be regarded as being due to irritating agents in the blood, which exert a peculiar influence on the skin. Irritations in the stomach and intestines, and icterus, etc., also produce Nettle-rash. Feeding animals on the husk of wheat, green potatoes, etc., as well as frequent changing of foodstuffs, likewise produces Urticaria. During its course, other diseases may also supervene, as English Horse-pox. Washing animals when heated is a very frequent cause of this disease. It is most frequent during the spring and summer, and when there has been heavy rain-fall and thunderstorms. In most of these cases, it is the result of sudden cold on a heated skin, especially in the case of animals in ill-health with vitiated blood. In many cases the Urticaria arises without any assignable cause.

It is, in the majority of cases, a simple symptomatic exanthem. Urticaria is seen chiefly in the horse, pig, and cattle. The disease should be treated separately.

* Translated from Friedberger and Fröhner's "Lehrbuch der Spec. Pathologie."

### Nettle-rash in the Horse and Ox.

This was formerly described as heat-boils or boil-fever. It is characterised by a very rapid course, and may spread to all parts of the body in a few hours. In the beginning, they are usually single, bead-like soft swellings of the skin. They appear scattered all over the body, and finally enlarge by coalescence, forming large swellings. The patches may also appear on the head, the fore extremities, the udder, etc., giving the animal a peculiar, bloated appearance. Itching is not always present. It also sometimes appears on the mucous membrane of the nose, mouth, tongue, etc., which may interfere with the breathing (*Sachs. Jahresber.*, 1869, p. 87). Zipperlen found the conjunctivæ of a cow very much swollen; also the mucous membrane of the rectum (*Repertorium*, 1880, p. 185). In the horse, petechial spots also appear on the nasal mucous membrane, due to hæmorrhage. Blisters may form also on the rete malpighii and epidermis, when the itching is usually severe. Besides the changes of the skin, there is general disturbance of the constitution, with slight fever (Nettle-fever). There is great weakness and languor, and inability to perform work. Symptoms of Catarrh of the stomach and intestines may appear, with diarrhœa, slight icterus, etc. Very often the eruption vanishes as rapidly as it took to develop. It may recur and become chronic, appearing several times in the same year.

*Treatment.*—Is hardly necessary. Covering the body and low diet. If the animal shows constitutional derangement, give a physic of aloes, salts, etc.

### Nettle-fever of the Pig.

The Nettle-fever in pigs is frequently mistaken for Pig-Typhoid, although it has nothing in common with it.

*Symptoms.*—This skin disease, which is generally sporadic in character, appears suddenly and disappears as quickly. It is attended with gastric and febrile disturbance.

(1) In quite healthy animals, it may appear during the night, with lumps over the upper part of the rump, the breast, the thighs and belly, etc., which are painful to the touch, and vary in size from a hazel-nut to that of a crown-piece, becoming confluent and ultimately acquiring larger sizes. Their colour also varies according to the stage of the disease. At the onset they appear as so many small red dots, and quickly enlarge round their own circumference, becoming anæmic and white in the centre, when it is known as the "white-nettle." But this appears only in the

milder cases, but in the more severe forms of the disease the eruptions are hæmorrhagic in character, at first appearing reddish, then blue, and finally turning into a brown colour. In place of serous transudation, ecchymoses under the skin take place. Rarely serous exudation may be seen on the surface of the eruptions, which readily falls off from desiccation.

(2) Gastric symptoms manifest themselves by the inability to swallow and constipation present in these cases. The pig is dull and listless, and may be seen hiding itself in straw and bedding, etc., and cannot be got on its legs. The mucous membranes are injected. There is heavy breathing, attended with simple, high fever. The motion of the animal is slow and stiff, as in rheumatic muscular affections.

*Course.*—The course of this disease is usually a benign one. In the slighter cases, recovery takes place in from one to two days; in severe ones, from four to six days. It has never been found to have led to death in any case. As recovery is perfected, constipation subsides and the exanthem disappears, when the disease is practically ended.

*Diagnosis.*—Formerly, this Nettle-fever was regarded as Pig-Typhoid, and even now-a-days the mistake is frequently made, but is inexcusable. Haubner described it more than forty years ago, as a distinct affection.

The distinction between it and Pig-Typhoid may be given as follows :—

(1) The Nettle-fever originates as eruptions noticed on the surface of the skin. Pig-Typhoid shows a discolouration of the skin, principally on the under parts of the body, or a diffuse infiltration.

(2) The Nettle-fever is a simple disease; whereas the Pig-Typhoid is a very severe, infectious malady, which in two or three days may lead to death.

(3) Nettle-fever is of a very mild nature, having a very slight degree of fever, and is usually sporadic.

*Treatment.*—Slighter cases require usually no medicine, except careful feeding. In severe cases, when constipation is present, clysters should be used. Calomel in doses of two to four grains may be administered. Glauber's salts, together with nitre, has also a very beneficial effect. And cold water douche.

(*To be continued.*)

## THE CASTRATION OF THE NORMAL HORSE.*

BY D. MCNAUGHT, V.S., RAPID CITY, MANITOBA, UPPER CANADA.

Of all the operations that fall to the lot of the veterinary surgeon, a mishap in regard to castration brings more discredit on him than any other. One of the principal reasons for this is, that we are supposed to commence operations on a healthy animal, and if the case does not end well, we have to take the blame for any latent disease that may be hanging about the subject. Or if any epidemic is around, and if from the shock to, or weakening of his system, he should fall a victim, or should he die from any cause a short time after he has been castrated, his death is invariably laid at our door. Another reason is, that so many empirics take up castrating, without any study or knowledge of the anatomy of the parts, and succeed fairly well; in fact, some who have adopted this branch of the profession in this way are the most successful operators in the country, and sometimes do what the educated veterinary surgeon dare not attempt, ignorance making them bold; while, because we are veterinary surgeons, they expect great things of us.

I do not intend to attempt to bring out any new theory in regard to this part of our profession, but rather by reading this paper to bring the subject before the association, give my own experience and invite discussion; so eliciting the views and experience of the members on a subject that interests us all deeply, and one on which there is a wide difference of opinion, both in regard to the manner of throwing and securing the animal for the operation, and also the mode of procedure in the operation itself. There is an old adage to the effect "that before you cook a bird catch it." I find that this is sometimes one of the most difficult parts of castrating a horse. Colts are often running wild on the prairie, never having been haltered, or even caught; and by the time we have them driven into a corrall or corner of the fence, and they have got away several times, and been galloped over miles of country to get them back, we may succeed in throwing a rope over their heads, choking them down, and getting our ropes securely fastened on them. Although I am not always in a very good mood by this time, I feel that I am not doing justice to either myself, my profession, or my employer, by operating on a subject that is so heated up—one, in fact, that is in the position of being hunted and frightened almost to death. But what are we to do in such a case?

* Read at the meeting of the Veterinary Association of Manitoba, held at Winnipeg, Canada, on February 12th.

We in all probability have come a long distance (for this is a country of magnificent distances), and have other colts to operate upon before we reach home; so we take chances much against our better judgment, and it is truly wonderful how many of the animals, after such treatment, do well. They often swell badly, but the recuperative powers are strong in that kind of stock; they have been brought up wrestling for themselves; always in pure air, and not pampered or overfed.

I shall confine my observations to the castration of the normal male horse, as that is the main part of the work that falls to our share, and as the remuneration is not very great, although probably as large as our patrons can afford, we, as veterinary surgeons, should adopt the method which requires the least possible amount of work, on our own part and that of the owner, so long as it is in strict accord with scientific surgery, in throwing and securing the animal in the quickest and safest manner possible, so that when secured he will be in the best position to be operated upon, and also secure from injuring either himself or us. For this purpose the hobbles are out of date; as they are hard, if not impossible, to put on wild colts, and if they can be got on, the animal is thrown too heavily, so that old animals especially are apt to injure themselves. I have seen several break their backs and legs when thrown with hobbles. And unless the upper hind leg is taken out of the hobble and drawn forward, the animal is not in a position to be easily operated on.

The old-fashioned rope with a knot tied near the centre, the loop slipped over the colt's head, and the ends brought around the hind fetlocks and brought back and through the loop on the neck, is also out of date; as a small colt is apt to pull the loop over his head, and when any of them are thrown in this way, the front feet are playing around the head of the operator, and often after these feet are tied to the hind ones, they stretch out their hind legs, holding them rigid, and in a very bad position for the operation.

I have seen a species of harness put on colts, with a lot of ropes and straps to buckle and adjust; but when these are all fixed, the colts are in no better position to be operated on than by a simple method of throwing and securing, which I learned from Mr. Wilson, of London, Ontario, a number of years ago, and which, for strength, simplicity, and ease of adjustment, and the power to keep the horse in proper position, I have never seen equalled. I have used it for fifteen years, and can now speak from experience, as I have tried all the other methods spoken of. Your secretary did me the honour to write and ask me to bring this tackle down to Winnipeg with me on this occasion, and show it to the members, some of

whom might not have seen it. It consists of a strong wide strap of leather, with pad on top to save injury to the horse's back, and to keep it from turning; two strong squares with ring for ropes to pass through, one on either side; and a lighter strap to go under the belly for tightening it on; while two long ropes with a hobble strap on one end complete the outfit. The strap is buckled tightly around the subject, and the hobble-straps are buckled round the front fetlocks; the rope is passed through the ring in the strap, around the hock, and back through the ring in the surcingle; the ropes are now dropped to his fetlocks, one strong pull draws all the legs up to the surcingle, and he is down, and so secure that he feels he has nothing to gain by struggling. All that requires to be done then, is to give a half hitch round each hind foot with the rope, take one of them around his rump, and give a half hitch on his other hind foot, to keep him from straining forward; his legs are now so tightly fixed that he will hardly make any resistance, and he is in the best possible position for operation—both for himself and the operator. This tackle will hold anything, from a small Broncho yearling to a 20-cwt. stallion —the latter by simply passing the rope twice around his leg and through the ring, so as to make doubly sure. With this tackle I have thrown and securely held bulls weighing 20 cwt., when operating on their sheath, dressing their feet, etc.; and they are the worst stock to keep down I have ever handled.

The standing position in castrating horses I have never tried, nor have I seen it done, but I would like to have the sense of this meeting on that point, because if the operation can be performed as well standing as lying on the back or side, we ought to be abreast of the times, and do it in that way.

This brings us to the operation itself, and to face the question at what time of the year is it safest and best to castrate horses and colts? Or does it make any material difference? My answer is, that horses may be safely castrated at any time of the year. I think I have castrated them in every month in the year, and the horses operated on in January and February (although they had been used for service) recovered as well and as quickly as any aged horses I have ever operated on. The reason I assign for their doing so well, is that the generative organs were not in such an active and excited state as they generally are in warmer weather, especially after the travelling season is over, and that they were in warm stables, and in robust health when operated on. The cold of the winter months had toned up their systems. And after the operation they were not continually exciting themselves, and sending blood and nervous influence to the injured parts, causing them to inflame and swell. I invariably,

however, delay commencing to castrate colts as long as possible in the spring, until the grass gets started and long enough for them to fill themselves, thereby cleaning them out, loosening their bowels, and putting them in the best state possible for a favourable termination to the operation.

Taken as a whole, the spring months are the most favourable for the operation, both for the colt and for the veterinary surgeon; easiest on the colt after he has done moulting, and a source of revenue to the veterinary surgeon, as this is nearly all ready-money, and at a time of the year when we are apt to be penurious. In fact, we are generally forced to undertake the operation then, and are left no choice; as the colts have been stabled all the long winter, and perhaps feed is scarce, or they want to send them away to pasture, or they will not remain quiet at home with other horses. Nearly all are anxious to have the job done in April, and have them healed up before the grass comes; and I think it is this urging on the part of our patrons, and probably the fear that some gelder, or another veterinary surgeon will intervene and do the job, that makes some of us rush the season, often against our better judgment, causing the loss of valuable colts to the owners and a bad name to ourselves.

My own experience and that of all the authorities with which I I am acquainted, go to show that we are apt to begin castration too early in the spring, especially in this country where the midday sun is so strong and the night is so cold.

As a rule, also, the stables in the country are wretchedly bad; for if they are warm they are foul-smelling, and full of wet manure, or dripping water from the roof. I find the horses do best that are cut in the field about the 1st of June, when they have shed their heavy winter coats, are done moulting, and are left out all the time, if no cold rains come. I castrated some grown horses at Lake Dauphin last July, and all did well, none even swelling.

Having settled the best time for castrating our horses, how ought they to be prepared for the operation? All that I consider necessary in the way of preparation for the ordinary colts of this country, is to have as little food in their bowels at the time of the operation as possible. If a grown stallion has been highly fed, or been travelling, he ought to have a few days of judicious starving, with bran mashes and a slight dose of physic; but I think that lowering the system at a time such as this is injurious, as we have an injury to repair, and we want the system braced up and all the forces of the animal at their best in order to secure the best results. Some authors advise washing out the sheath with soap and water, others with a sublimated solution. I did this

myself for the first two years of my practice, but I found it a great deal of labour, for which I got no pay, and as it did little good I came to the conclusion to abandon it. I now carry with me a bottle of pure olive oil, into which I put carbolic acid, half ounce to a pint of oil. Of this I pour about a tablespoonful into the sheath, which I take hold of, and jerk it about in all directions, coating all its interior with the mixture. As soon as I finish taking out the testicles, I open each incision and pour in a small quantity of the oil to prevent the wounds healing by the first intention, which they are very apt to do in healthy subjects, thus preventing swelling of the sheath, and the subsequent reopening of the cut to let out the matter coming from the end of the cord. As soon as the horse gets up he will commence working his penis out and into the sheath, which with the oil will cause the accumulated dirt and scales to drop off the organ, leaving it smooth and clean; should any swelling supervene, the inside of the sheath is in a good state for treatment. I have the sheath well bathed with hot water, the wounds opened with the oiled finger, and puncture the tips of the sheath with a lancet; I also give a few diuretics, which generally make matters right.

We have had a great many different methods of emasculating horses and other animals, tried by different nations and men; but so far as the horse is concerned, they have all been rejected or gone into disuse save five: The actual cautery, clamps, torsion of the cord, by the ecraseur, and by ligature of the cord or its arteries. The actual cautery is one of the oldest and one of the surest methods of performing the operation, but it has now to a great extent been given up, except in remote districts, where it is still in use. In the first two years of my practice I used nothing else, but found it produced a great amount of swelling, which at times extended as far forward as the fore-legs and up the cord causing a local peritonitis, with great constitutional irritation, which in some cases ended in death.

The clamps have their advocates, although I think that few veterinary surgeons now use them; but I have known some men in whose hands they were a perfect success. Not so in mine, however; I used them for one year, and have never employed them since, except in cases of hernia. In these I have always had good fortune, by laying bare the vaginal tunic and closing the clamp over both it and the cord, putting no caustic on, rounding the edges and not tying over tightly, so as to cause the parts to slough off too quickly. The trouble I had with clamps arose from the fact that the constant strain on the cremaster muscle often caused it to become paralyzed, when the cord hung out, and

Schirrus was the result. I then had to repeat the operation for nothing, besides getting abuse in many cases. To remove the enlargement on the cord I dissect down as far as possible with the handle of my scalpel, and push as far down as I can a long and strong cord; this I draw very tight and tie, then I cut the cord half-an-inch above, smear on some digestive ointment, and use a firing-iron until the vessels are well closed, when I take off the cord, and dress with carbolic oil. I have never had to look at a case of this kind a second time. About five years ago a gelder came about the north of Rapid City, and castrated quite a number of colts; they all had to be operated on for Schirrus except one. While using clamps I had three cases of bleeding which nearly proved fatal; the clamps were on all right, but the blood came from far above them. I thought then, and think now, that by letting go the abdominal tunic, the artery of the cord was ruptured high up. After endeavouring in vain to stop the hæmorrhage by dashing cold water over the animal's loins, etc., I was forced to throw them, remove the clamps, cauterise the end of the cord, plug up the opening with cotton dipped in perchloride of iron, and put in stitches. In one case the blood forced itself up through the abdominal ring, and the colt—a strong two-year-old—went nearly to a skeleton, but finally recovered.

I had now tried two methods of castration (and found their weak points) when torsion came into vogue, and I have been resorting to torsion of the cord ever since. I use the common torsion forceps, and have castrated nearly 1,800 horses since I began, and with the best results, having lost very few; although some will die by whatever method they are operated on, or by whom. I think all of you, gentlemen, will bear me out in that statement. I have never tried castrating with the ecraseur, although I have had one for some time. The results of the operation by torsion, and the ecraseur are nearly identical; both leave the cord simply crushed off at the end, and in the best possible state to heal without any irritating scab—as by actual cautery, or pulling down of the cord, and sloughing it off as by clamps. I have never seen nor heard of a schirrus cord by either of these operations; as the cord when separated is allowed at once to go back into the canal, is excluded from the air, and is subjected to pressure. The want of pressure and the exposure to the air are, I believe, the only causes of schirrous cord, all authorities to the contrary notwithstanding.

I operated on 146 horses and colts last season, and have never heard of more than four or five that even swelled. Torsion is the bridge that has carried me over safely so far, and I am inclined to stick to it for several reasons. Your ecraseur is apt to break or

go wrong when you are far from where it can be repaired, and costs more, to start with. The forceps can be had for six dollars, will last a man his lifetime, and are no more liable to go out of repair than a hitching post. I attribute what success I have had in this line, (1) To throwing and securing the animals properly; (2) To the use of carbolised oil in the sheath and incisions; (3) To keeping my forceps and scalpel perfectly clean by burning the former, boiling the latter, and disinfecting them both before using, every time I go off on a castrating tour. I use this knife for nothing else; (4) To the fact that I never cut off the vaginal tunic, I simply let out the testicle, pull on the clamp sufficiently far below the epididymis to give me room to put on the upper forceps and allow about an inch between, which space I hold tightly with my finger and thumb; if this is not done, the cord is apt to be cut off too quickly, close to the under clamp. If the tunic is let go, sometimes it slips down without any apparent tearing or trouble. At other times it tears into the substance of the cord, causing swelling and a certain amount of bleeding; while if left attached, the end of the cord is at the incision in the tunic, so that the pus is not kept back and confined in the canal, but finds its way through the lower opening in the scrotum. I always make sure that a sufficiently large opening is made in the tunic; if a yearling I generally enlarge the opening; in aged horses the letting out of the testicle makes a sufficiently large aperture. Sometimes in yearlings we find one of the testicles badly developed and the cord very short, giving a good deal of trouble in holding the organ until it can be cut down upon. The operator is apt to push the testicle against the thigh, and cut down on it in that way; but this is dangerous. I have had several cases in which colts lost quite a large quantity of blood from this cause. The safest way is to make the opening at the proper place, force in the finger and thumb, and seize the testicle, kick the colt in the ribs, or strike him on the nose, when he will struggle and relax the testicle, when it can be got in the clamp without further trouble. The omentum sometimes makes its appearance after the testicle is removed, and I never hesitate to pull it out and tear in back in threads with my thumb nail; sometimes two or three feet of it comes away.

# Editorial.

## THE VETERINARY PROFESSION AND CRUELTY TO ANIMALS.

THE members of the veterinary profession should be, and we believe they can claim to be, by their training and by their every-day experience, the protectors of animals from pain, and the best qualified to relieve them from it when they are suffering. It is their duty—their sacred duty—to intervene on their behalf when they are being ill-treated, or submitted to anything which savours of cruelty, and they may demand credit, as a body, for having carried out that duty faithfully and zealously. The very suspicion of a veterinary surgeon behaving cruelly towards animals, is repugnant to our sense of what he should be; and it is not going beyond common reason in asserting, that if found guilty of cruelty he should be punished more severely than any other person. In every movement for the amelioration of the lot of animals, members of our profession have been found taking a share, and humanity has ever been one of their watchwords. Though oftentimes the operations which they are called upon to perform for the relief of animals, or for rendering them more useful to man, may appear painful or even unnecessary, yet it is from no desire to wantonly inflict pain or cause torture that they act, but from the best of motives, and everything is done to abbreviate or obviate suffering. Rarely, indeed, have charges of cruelty been preferred against veterinary surgeons, notwithstanding the nature of their calling, and we are certain that their sense of duty will keep them free from such charges.

That such charges may be brought against them, however, and most undeservedly and unjustly, has been most shown recently by two prosecutions instituted by the Royal Society for the Prevention of Cruelty to Animals, one of which is reported in this month's Journal, and the other was referred to in our correspondence pages not long ago. The latter was a case in which a veterinary surgeon at East Grinstead performed an operation in the most humane manner upon his own horse, and yet he narrowly escaped punishment and ruin, though entirely innocent. The case now recorded is even more distressing, from the fact that not only was the veterinary surgeon altogether blameless, and the charge against him without a shadow of foundation—indeed, he deserved credit for the skill and care with which he treated his cases—but by what appears an extraordinary proceeding under the circumstances, the prosecution was carried on intermittently for weeks; thus apparently needlessly protracting the suffering and mental torture of the defendant, as well as increasing the heavy expenses to which he was put in his endeavour to prove his innocence. A more discreditable prosecution can scarcely be conceived, and for the credit of the

veterinary profession we rejoice that it utterly failed. Had the defendant not been able to prove, by irresistible and voluminous evidence, that the action of the Society had no justification, there can scarcely be a doubt that he would have been consigned to prison. The effects of such a punishment on a veterinary surgeon, and for such an offence, our readers will be able to appreciate, and not the least would have been that following the removal of his name from the register of the Royal College of Veterinary Surgeons.

The Royal Society for the Prevention of Cruelty to Animals was ill-advised in undertaking these two prosecutions, and certainly it has not enhanced its reputation with the veterinary profession, which must now feel that none of its members is safe from a similar and equally unwarranted charge, which, although refuted, may mean something closely akin to ruin. The Society is wealthy and influential, and can obtain the highest legal talent, and procure, as the present case shows, an abundance of veterinary witnesses in its behalf; therefore, a poor man has a very faint chance of success against it. What the profession should do under these new conditions, we do not venture to suggest; but as what was the case of Mr. Leeney and Mr. E. Sewell recently may be that of any member to-morrow, it is time that some step should be taken to protect the innocent from monstrous charges, which although eventually shown to be without foundation, may yet entail annoyance and distress, as well as heavy material loss.

The following extract from *The Stock-Keeper* of May 15th, expresses pretty fairly the general opinion with regard to Mr. Sewell's case:—

"The summons taken out by the Society for the Prevention of Cruelty to Animals against Mr. Edward Sewell, M.R.C.V.S., for starving horses placed in his charge, has been dismissed by the magistrate after a protracted and disagreeable trial. We were perfectly confident of this result, and in congratulating the unfortunate defendant upon his acquittal, we feel bound to express strongly our deep regret that such a Society as this is, and supported by the public's charity, should have made such a serious charge upon the insufficient evidence they were able to produce. Unless the facts in their possession were of an absolutely irrefragable character, they were not justified in putting a man upon his trial, for the reason that, however innocent he has proved himself to be, a shadow has been cast upon his reputation which is calculated to damage seriously his professional prospects. There are numbers of people who have caught a glimpse of the Press reports, who may not have seen the result. Mr. Edward Sewell has been needlessly, and as the result shows, unjustly persecuted, and put to an enormous expense to clear his character, while the Society have expended a large sum of the public's charitable donations without purpose."

With regard to the veterinary evidence given on behalf of the prosecution, we read it with a feeling of pain and wonder. There is not a text-book of veterinary medicine worth opening which does not describe Sarcoptic scabies and its serious results, and certainly those

who have had much experience in dealing with it will not endorse the notions of these experts. It will be well, however, before veterinary surgeons undertake the treatment of such cases—if they wish to avoid the terrible ordeal through which Mr. Sewell has passed—to inform the prosecuting Society, and obtain a guarantee from it that they may honestly pursue their calling without fear of fine or imprisonment. For to this pass affairs seem to have arrived. The process of degradation has been somewhat rapid within the last two years; it only needed this trial of a veterinary surgeon on a groundless charge of cruelty, to demonstrate how low we have fallen. No other profession in this country could have furnished such an example. Where will the descending process end? Put the criminal prosecution alongside the action against a veterinary surgeon in the Court of Queen's Bench, also recorded in this month's Journal, and ask what we have to be proud of or to boast of.

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## CHRONIC GLANDERS IN MAN.

MM. HALLOPEAU and JEANSELME (*Annales de Derm. et de Syph.*, April, 1891, p. 1) have had under their care in the Hôpital St. Louis a carman who had received the infection of Glanders from one of his horses, and died after suffering from the disease for six years. They remark on the length of time which the disease may exist (six years), and the length of time during which in its course the symptoms may remain stationary (in this case three years). They consider that Glanders may be suspected when, after a long series of abscesses, subcutaneous or in the muscles, ulcerations form in the nasal fossæ, the buccal mucous membrane, or on the velum palati, with painful swelling of one lachrymal gland, coinciding with purulent discharge from the nostrils. The abscesses may, after being discharged, heal spontaneously, although this is rare. Inoculations show that the pus which they secrete rapidly loses its virulence, whilst that of the abscesses which become fistulous preserves indefinitely the property of transmitting the disease. The case which they describe appears to be the first recorded in which the ulcers attacked and destroyed the lips. The ulceration is characterised by the absence of swelling of the glands, by the formation of deep sloughs with rapid destruction of the tissues, and by a pustular eruption which may be confined to the skin of the nose. Acute Glanders (usually very short) may last more than forty days. Whilst the pus from the ulceration was virulent, the urine collected during the acute stage gave negative results when inoculated in animals. In the pus obtained from abscesses which had not been opened, the bacillus was found either pure or associated with staphylococcus. To establish the diagnosis rapidly two means are available: cultures on potato, which in a few days acquire the characteristic reddish-brown colour; and inoculations into the peritoneum of guinea-pigs, which are followed within forty-eight hours by inflammation of the tunica vaginalis, with characteristic caseous suppuration. The ulcers of Glanders have the following characteristics: The edges are irregular, sinuous at certain points, jagged at others. They are everywhere remarkably clean cut, and undermined by ulcerous excavations. At some points the borders, thus become freed from the subjacent tissues, are retracted and rolled over, as is sometimes found in epithelioma, but they retain their mobility, and do not have the characteristic wooden induration of cancer. From the bottom of the ulcer, winding, vegetating, ulcerating tracts proceed in various directions, particularly under the edges of the ulcer. The surface of the ulceration is

continually moistened by a shining discharge, from which there project hemispherical yellowish papules, which might be taken at first sight for pustules.

M. Besnier (*ibid.*) describes another case of chronic Glanders, the patient having died four or five years after having contracted the malady. The first symptom in this case was a chronic pulmonary affection, of which the symptoms were incessant cough, night sweats, abundant expectoration, loss of appetite, emaciation, and debility. It was only after eighteen months or two years that the ordinary symptoms of Glanders appeared by the development of the disease in the left forearm and in the nose.—*British Medical Journal.*

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## CONTAGIOUS PLEURO-PNEUMONIA IN QUEENSLAND.

THE following is a report of M. Loir, assistant to Professor Pasteur, to the Queensland Government:—

The Hon. Sir S. W. Griffith, K.C.M.G., etc., Chief Secretary of Queensland.

Sir,—At the request of the Government of Queensland, I commenced on the 10th December of last, for a period of three months, which was to be extended if necessary, a series of experiments on the subject of the preservation of the virus of Pleuro-pneumonia and of the cultivation of the microbe of that disease.

I have now the honour to submit to you a preliminary report on these experiments, which I venture to hope will be of interest to owners of stock. If I have not up to the present completely succeeded in preserving a strong virus, I have every hope of succeeding in so doing.

Without entering for the present into the details of the experiments which I made, I have the honour to lay before you their results, and the conclusions at which I have arrived.

1. The virus of the lung of an animal suffering from Pleuro-pneumonia inoculated behind the shoulder of a calf from five to six months old has always proved virulent, and has always caused a large œdema. In a case of large œdema I have found on making a *post-mortem* examination certain portions of the lung diseased with red hepatisation.

2. The liquid extracted from the pleural cavity has not always proved so constantly virulent.

3. The liquid taken from the œdema has been found to be virulent after three successive transitions through calves, but in order to always obtain this result it is, I believe, necessary to briskly break the cells of the œdema with a hammer, in a manner indicated by Dr. Germont and myself two years ago in our report to the Queensland Pleuro-pneumonia Board, so as to not only allow the virus to run out more easily, but also to have in the liquid some of the solid particles which I believe contain more of the virulent elements than the liquid.

4. I have found some microbes. In the lung I have been able each time to isolate two different microbes. The one is, judging from its physiological characteristics, very closely allied to the "Staphylococcus pyogenes aureus," so far as I am able to ascertain. The other, a small bacillus, develops very readily in solid media; in broth it shows a growth twenty-four hours after its inoculation therein. These growths give no results when inoculated in guinea-pigs and rabbits.

5. The growth, if preserved for ten days and then inoculated behind the shoulder of a calf, gives rise to no reactionary symptoms, and yet conserves its vitality, for if placed in broth it develops a growth in twenty-four hours. The same growth inoculated at an earlier stage, that is to say after twenty-four hours' cultivation, behind the shoulder of a calf, gives rise to an œdema

similar to the ordinary œdema produced by the inoculation of Pleuro-pneumonia virus behind the shoulder, but this œdema has never been as large and has never caused death. The liquid taken from this œdema when inoculated in broth has produced no growth, so that in this respect its effects are similar to those of the ordinary liquid taken from the œdema of Pleuro-pneumonia.

6. I have discovered this particular microbe in two lungs procured from animals which had succumbed to the disease.

7. In different cases I have found it in the heart blood of calves which had died after inoculation behind the shoulder, and which displayed a large œdema at the spot of inoculation. The *post-mortems* were performed on these calves a few hours after they had succumbed to the effects of the disease.

8. On one occasion, after putting a large quantity of pulp, obtained from the spleen of a calf which had died with an œdema, in broth, I had a very well-defined growth of the same microbe.

9. Having inoculated a very young calf behind the shoulder with lung virus, I did not obtain a large œdema, but, nevertheless, the animal died in the twenty days with the synovitis of the articulations. Having inoculated in broth the liquid taken from the articulation of one of the forelegs, I obtained the growth of the above-mentioned microbe.

10. A calf inoculated with a growth of the microbe which had been preserved for ten days, and which had no œdema, subsequently inoculated with lung virus, developed a large œdema which could have been utilised for inoculations in the bush. This calf does not, therefore, appear to have been protected by the inoculation of a growth of the microbe ten days old.

Another calf inoculated with a growth of the microbe twenty-four hours old had an œdema but did not succumb; inoculated afresh with lung virus behind the shoulder, and on the opposite side, it showed no sign of illness, so that it appears to have been protected by a more recent growth of the microbe.

11. From a calf with a large œdema I was able to extract in a Pasteur tube (pipette) about half a pint of virus. I kept this large quantity of virus in good condition for twenty-three days, and after the expiration of this period the virus used for inoculation was found virulent.

12. I have been able to send on several occasions to Queensland and in New South Wales full tubes containing sufficient virus to inoculate 200 or 300 animals in the tail. The tubes which I sent thus are similar to those which I use for sending Anthrax vaccine up country in.

This preliminary report will prove to you, I hope, that further researches are necessary to arrive at the certainty that the microbe I have now in hand has or has not any connection with Pleuro-pneumonia. I have consequently the honour to ask you to authorise me to continue my experiments. I must add that, adopting the suggestion I have just received from the Institute Pasteur of Paris, which follows with the greatest interest these experiments, I am desirous of trying the process for the preservation by freezing of Pleuro-pneumonia virus, published by my friend, M. Laquerrière, a process which I had the honour, a few days ago, to lay before Mr. Gordon, Chief Inspector of Stock. If, in effect, these experiments are confirmed it will be easy to have a small room in the different towns up country in which refrigerating chambers exist, and to preserve in these places Pleuro-pneumonia lungs. When a squatter wishes to obtain virus it will then be easy to send him a sterilised tube containing a small portion of frozen lung, and with this tube he can inoculate on his station a calf behind the shoulder in accordance with M. Pasteur's process, and in three weeks this calf will produce large œdema, in which he will find sufficient matter to inoculate at the tail a large mob

of cattle. It would even perhaps be possible to forward the virus in large quantities, for it will always be easy to preserve by freezing a large quantity of lung collected when cattle are being slaughtered in slaughter-yards. It will be necessary to see by experience whether this process would not prove simpler than to keep up small stations, as is done since Dr. Germont and I studied the question in Queensland, for the purpose of always having a calf inoculated behind the shoulder, a process which demands a careful and experienced person to keep the station in activity.

EXPERIMENTS IN PARIS.

The following is an account of experiments made in Paris at M. Loir's request by M. Laquerriere:—

The lung from a Pleuro beast, collected at the slaughter-house on the 23rd April, 1890, was brought in a cold room at about 20 deg. Fahrenheit. This lung when congelated was like a hard lump, friable, and not going into decomposition. Then on the 12th of June we tried—Professor Pouchet and I—a first experiment to see if the virulence was preserved into this lung after congelation. Some glass tubes and corks were first sterilised. Small pieces of lung taken aseptically were introduced into these tubes, where they slowly thawed at the ordinary temperature. In leaving the congelated state the pulmonary tissue turns into a pretty red colour, and a bright red liquid runs from it, formed by the serosity mixed with a large quantity of blood corpuscles. This serosity was inoculated within two hours to twenty-seven cattle in a dairy in which four cattle had just been sacrificed in consequence of Pleuro through the Contagious Disease Act. Eight other cattle in the same place were inoculated comparatively with the serosity from the lung of a cow which was just killed. Here follows the result of these inoculations. From the 10th to the 15th day after the operations such inflammatory symptoms as heat, pain, and stoppage, show themselves at the point of inoculation. These symptoms have, perhaps, been generally a little less marked on the beast inoculated with the fresh lymph, and more on five of the cattle inoculated with the congelated serosity, the swelling came right up to the tail, without taking the same off. Since the 12th June we have had a great many experiments with the serosity of the same congelated lung every time a part of the lung was cut in the freezing-room and put into sterilised tubes. The serosity so obtained was used as follows:—1. The same day. 2. After some days, but in keeping the tubes in a cold place in the dark. These experiments began on the 2nd June, 1889, and were continued until the 14th June, 1890, and we are in a position now to give the following conclusions:—1. A Pleuro lung has kept its virulence for more than a year. 2. The inoculations made with the serosity of this frozen lung, newly collected, gave the positive result in the generality of cases. 3. The inoculations made comparatively on cattle with this serosity of a lung from a Pleuro beast recently killed gave about the same result; however, the effects seem to be more energetic with the frozen lung. 4. Inoculations made with tubes containing a piece of frozen lung and kept for some days, for a month and even more, gave a positive result. Nevertheless, these results were less certain in proportion as the liquid was becoming older. 5. The lung submitted to the freezing process seems now, after fifteen months, in the same condition as it was on the first day.

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## PROSECUTION OF A VETERINARY SURGEON FOR CRUELTY TO HORSES.

A MOST important and painful trial for cruelty to horses commenced at the Westminster Police Court, London, on March 13th, and continued—the case being only heard one day in the week—until May 8th, Mr. de Rutzen being

the Magistrate. The prosecution was instituted by the Royal Society for the Prevention of Cruelty to Animals, the defendant being Mr. E. Sewell, M.R.C.V.S., and the cruelty imputed consisted in "subjecting the horses to improper medical treatment and gross neglect, improper stabling and bedding and warmth, and improper and insufficient food and nourishment." It appeared that Mr. Sewell had undertaken to treat a number of horses for Mange, some of these having been affected for six or seven weeks, and were consequently in a miserable condition. In order to isolate them from horses still apparently free from the disease, he hired two stables which, though old, were in every way suitable for the purpose of treatment, as was proved in evidence—floors, drainage, and ventilation being considered good. In one stable there were iron mangers, in the other old wooden ones, which, as is nearly always the case, had been gnawed by previous horses, and were otherwise so worn out that Mr. Sewell had them removed, and the horses were fed off the ground. According to the evidence for the defence, the horses were properly treated for Sarcoptic Scabies, but some of them were seriously affected and in very poor condition, and one, which was greatly emaciated and debilitated, died.

The condition of the horses had been reported to the Society, and it sent its inspectors and Professor Pritchard, and some other veterinary surgeons, to see them; and then it instituted proceedings. The notes of the trial are far too voluminous to reproduce here, but we may give the gist of most of the veterinary evidence for the prosecution and defence.

Professor Pritchard stated the horses were suffering from starvation; the stables were as bad as he ever saw; the mangers were gnawed all to pieces; the floors were all to pieces, very uneven, very wet and very dirty. The emaciation was due to want of food. It was partly on his report that the prosecution was undertaken, as the case was submitted for his opinion. The horses were badly affected with skin disease; he could not undertake to say it was Mange. He did not think Sarcoptic Mange difficult to cure. He never knew a horse to die from Sarcoptic Mange; horses do not die through the irritation and debility caused by the parasites, and he would not agree with those who said they did. He satisfied himself that there was a gross case of cruelty. If horses suffering from Mange were poor before, under his treatment he would expect them to gain flesh pretty quickly. He had no recollection of seeing a case where a horse had been reduced to extreme poverty by Mange.

Mr. Boswell, M.R.C.V.S., had made a *post-mortem* examination of one of the horses that died; death was due to want of sufficient food. Never heard of a horse dying from Mange. The horses he saw were suffering from starvation and neglect. Horses suffering from Sarcoptic Mange would eat better than healthy horses.

Mr. Reedish, M.R.C.V S., gave similar evidence, stating that if a horse suffering from Sarcoptic Mange were well fed, but not medically treated, it would not die.

Mr. Bignold, M.R.C.V.S., had seen hundreds of cases, never saw horses lose condition from the disease, and they often became fat.

Mr. Ridler, M.R.C.V.S., had had a great deal of experience of Mange; horses if properly fed kept their condition; never heard of horses dying from it. The disease should be cured in twenty-four hours.

Mr. J. R. Cox, F.R.C.V.S., was of opinion that the irritation from Mange could be soon allayed. Never knew of a horse being reduced to emaciation by Mange if properly treated; horses if well fed may even improve in condition—this is well known.

Mr. G. Williams, F.R.C.V.S., had very considerable experience of Mange—it certainly does not throw animals off their food; if well fed and properly

treated they might even improve, and he knew of animals improving in condition, because of the rest and good feeding. Never knew of horses dying from irritation caused by Mange; the irritation can be easily allayed as a rule.

Mr. J. Lupton, F.R.C.V.S., had much experience in Mange; never knew of a horse reduced to emaciation by it when properly treated. Had cured forty-eight horses in one place in three weeks.

Mr. J. McQueen, F.R.C.V.S., agreed with previous witness. If horses suffered from Mange and became very emaciated, he would come to the conclusion that they were suffering from want of food.

Mr. H. P. Talbot gave evidence which we forbear publishing.

For the defence, Professors Williams and Penberthy, Dr. Fleming, Mr. D. Gregory, F.R.C.V.S.; G. Sampson, M.R.C.V.S.; A. J. Sewell, M.R.C.V.S.; R. Glover, M.R.C.V.S.; and F. Spencer, M.R.C.V.S., gave evidence—clinical and pathological—as to the serious nature of the malady and its being frequently very intractable, causing more or less rapid loss of condition, and not rarely terminating in death, no matter how well fed the animals were; giving instances of this from their own personal experience, which was opposed—in nearly every particular—to that of the experts for the prosecution. Dr. Fleming went so far as to state that he considered Mr. Sewell deserved credit for the skilful manner in which he had treated the horses, and restored them to serviceability in such a short time. There was no evidence whatever that the horses had been starved through want of food.

Evidence was also given by stablemen and others as to the manner in which the horses had been fed, the sufficiency of the food, cleanliness and suitability of the stables, etc.

In reviewing the evidence, his Worship said there was no evidence to contradict what had been proved on the part of Mr. Sewell, that the horses, which were the subject of complaint, were regularly bedded down at night, and that the stables were cleaned out once or twice a day. He regretted that the case was not tried in the form of an action against Mr. Sewell to recover damages for alleged neglect and ill-treatment, because in that event it would have had the consideration of a jury. The crucial point was, did one horse die from starvation, and were others reduced to a state of emaciation by want of food and general bad treatment? Or was the emaciation the result of the disease from which the animals undoubtedly suffered, aggravated by the intense cold of the weather? It had been proved conclusively that food amply sufficient in quantity and good in quality had been supplied to these stables. There was nothing whatever to show that, to the knowledge of Mr. Sewell, any of it was kept back from the horses, and it was necessary to show that for the prosecution to succeed. Upon the point whether the emaciation was the result of want of food, or of the disease which they were being treated for, no fewer than fifteen veterinary surgeons had been called, eight on one side and seven on the other. These men were the ablest in their profession, and those examined for the defendant swore positively that the condition of the horses was due entirely to the wasting nature of the disorder. In these circumstances it was not for him to give a casting vote, and he should dismiss the summons, but without costs.

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## DISHORNING CATTLE.

THE question of the legality of dishorning cattle, which is of great importance to the agricultural classes, and has been a subject of conflicting discussion in different parts of the kingdom, came before the judges of the Queen's Bench Division in Dublin on May 4th, for judgment upon a case stated by the magistrates at Kells, county Meath. The Court was comprised of the

Lord Chief Justice, Mr. Justice O'Brien, Mr. Justice Johnson, Mr. Justice Holmes, and Mr. Justice Gibson. A prosecution had been brought by Detective Inspector Newland, at Kells, charging a farmer, named M'Donough, with having caused the horns of twenty-six oxen to be cut off, and with having otherwise cruelly ill-treated the animals contrary to the 12th and 13th Vict., chap. 92. The defence was that the advantages resulting from the operation of dishorning, as proved by the witness for the defence, were out of proportion to the pain caused by the operation, that the operation was reasonable and necessary, and not done with the intention of causing pain, and was therefore justifiable. The magistrates held that the defence of justification should prevail and gave judgment against the complainant. From this decision the complainant now appealed. The Lord Chief Justice, in giving judgment, said that Baron Dowse and Mr. Justice Andrews in Ireland, and Lord Coleridge and Mr. Justice Hawkins in England, had decided against the practice of dishorning, while the Common Pleas Division in Ireland and the Scotch judges had decided in favour of the practice, being fourteen Judges in favour of its legality and four against. Having regard to the evidence that had been given as to the character of the operation, the, no doubt, very great but very temporary pain which attended it, the motives and objects of those who got it performed, and the results that followed from its performance, he held that the magistrates were justified in coming to the conclusion that the pain which was inflicted was not inflicted without good reason, and he was of opinion that, accordingly, they were justified in dismissing the complaint before them and the respondents should have their costs. Mr. Justice O'Brien was also of opinion that the practice was legal, but he had some doubts as to whether it might be contrary to the spirit in which it was intended man should exercise his dominion over the lower animals as their master, and not as their cruel tyrant. The other members of the Court concurred with the judgment of the Lord Chief Justice, so that there are now nineteen Judges for dishorning and four against.

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## ANILINE DYES AS ANTISEPTICS.

PROFESSOR STILLING, of Strasburg, who introduced to notice aniline as an antiseptic, gives as the results of his experiments, the following facts:—1, Methyl violet (one of the aniline dyes) is about three times as powerful as sublimate in its action on the Anthrax bacillus, and quite as effectual as sublimate in its action on the *Staphylococcus pyogenes aureus;* 2, it is perfectly non-poisonous; 3, in consequence of this, it is immaterial how strong the solution may be, even up to the use of the pure substance itself; 4, it does not coagulate egg albumen; 5, it possesses a wonderful power of diffusion, penetrating in the eye like atropin.

The following are the preparations of the dyes:—

1. *Pure Methyl Violet.*—To be used as powder for large wounds and ulcers.

2. *Large Pencils.*—For small wounds, burns, etc. For purulent cases the blue pencil is better than the yellow, on account of its greater antiseptic property.

3. *Small Pencils.*—For application to the eye, in cases of corneal ulcer, etc.

4. *Powders.*—Of 1 in 1,000 strength for mild cases of Conjunctivitis, and for more severe cases of 2 per cent. strength.

5. *Ointments.*—In strengths varying from 2 per cent. to 1 in 10.

6. *Solutions.*—Used in strengths of 1 in 1,000 to 1 per cent. The 1 in 1,000 solution may be used for ordinary cases of Conjunctivitis, Keratitis,

etc., and in non-purulent cases the yellow dye, auramin, may be used, on account of its cooling properties. The solutions should be filtered and kept in dark glass bottles, and changed every eight days.

The substances should be absolutely pure.

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## THE SHOEING OF HORSES FOR MILITARY PURPOSES.

BY GEORGE FLEMING, C.B., LL.D., F.R.C.V.S., PRINCIPAL VETERINARY SURGEON.

(*Continued from page* 217.)

Another marked example is to be found in the *Times* correspondent's accounts of the Danish retreat from Schleswig to Sonderburg, during the Prussian-Danish War, on the night of February 5th, 1865. Immediately after it had been determined that the Danes should effect a hurried retrograde movement, bad weather set in with great violence. "The snow thickened and hardened on the ground, the road became smooth and bright as glass; horses and men slipped dreadfully, and fell at almost every step. Not one horse in the whole Danish Army was rough-shod that night; on the contrary, the shoes both of saddle and draught horses were worn smooth by the five or six days' incessant march on muddy ground, and the progress of the army met with terrible hindrance at the outset. . . . It was not long before our march began to exhibit, on a small scale, some of the horrors of the famous retreat of the French from Moscow. The night was dark—the cold terrible; the thermometer, I daresay, did not mark more than four or five degrees below the freezing-point—but the chill in our veins told a very different tale, and the slipperiness of the road was perfectly awful. The snow, which was falling thick and fast at frequent intervals, lay in the fields three or four inches deep, and fringed the trees in the forest with the most picturesque fretwork; but it was trodden to the thinnest layer by all the feet, hoofs, and wheels of a whole host, till it glistened like ice in the occasional gleam of some pale star. . . . Dragoons, artillerymen, all who travel on saddle, were dismounted; even led horses were put to the direst exertions to keep their footing; draught horses had to be held up, and cannon, caissons, and ammunition or baggage wagons had to be dragged by the sheer strength of men, whose tread was no steadier. The falling of men and of beasts, and the cracking of wheels and axletrees was prodigious. It took us full nine hours to go over the first Danish mile and a half (less than seven English miles) of ground. Morning broke upon us long before we were halfway between Schleswig and Fensburg, and we reached the latter place about four o'clock p.m. on Saturday, having accomplished the whole distance of twenty-two English miles in eighteen hours. . . . We had not gone half a mile from Schleswig before we found a very heavy piece of siege artillery forsaken on the road. The eight horses which had dragged it had become, owing to the state of the roads, as powerless as so many new-littered kittens, and all the efforts of the men to share the work with them was unavailing. In the same manner as we advanced on our dismal march, we, who were in the rear, came up with broken carriages, dismounted caissons, and horses fallen never to rise. The obstruction to our progress was indescribable."

Fortunately for the Danes, the Prussian army was no better provided than themselves with the means to enable their horses to travel on the ice; otherwise the entire retreating force might have been captured, or at least severely harassed and despoiled. Profiting, however, by this experience, the Germans soon after had a system of winter shoeing introduced into their army—that of steel pegs screwed into the shoes, and this proved of great value to them during the war with France in 1870—71, as the French were not so provided during the winter, and were, consequently, on many occa-

sions placed at a serious disadvantage—at times, even, large forces were gravely imperilled. For while the Germans could move freely on ice-covered roads, the French mounted corps could scarcely stir. Numerous instances of this state of affairs were recorded at the time and subsequently, and one in particular was cited some time ago in a "Bulletin de la Reunion des Officiers." "An officer to whom I was speaking of the necessity for having a good system of winter shoeing (*ferrure à glace*), told me that he had been of that opinion for a long time. He was with the army of General Bourbaki during the war of 1870-71, and had witnessed the unheard-of efforts of the men and horses to save as much as possible of their provisions and materials of war, on retreating into Switzerland. For lack of any better appliance, rags and wisps of straw were fastened on the horses' hoofs, while the men pushed the wheels; but their efforts were in vain! . . . This officer saw a lieutenant of artillery in a state of extreme despair because two of the guns of his battery had rolled into a ravine dragging their horses with them, owing to the unfortunate animals not being able to keep their footing on the snow and ice. . . . In January, 1871, the retreat of Bourbaki's army was converted into a veritable disaster in consequence of the absolute failure of shoes provided with appliances for ice travelling. The *Revue Vétérinaire* for October, 1876, corroborates these statements with regard to the misfortunes of the French Army of the East in 1870-71, due to this neglect. "Our cavalry," says that journal, "composed of good horses, partly obtained by requisition, was reduced to impotency by the obstacles which the snow and ice opposed to its progress; while the cavalry of the German Army, furnished with steel screw studs (*grappes d'acier à vis*) marched, as General Martinez, one of the unfortunate Bourbaki's officers, informs us, with no more difficulty than if they were on the finest roads. This is a new instance, it adds, "for determinining us to be provided for the future, and to discover the readiest and best frost-shoeing."

(*To be continued.*)

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# Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

## ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL MEETING, HELD MONDAY, MAY 4TH, 1891.

Professor JAMES MCCALL, President, in the chair.

PRESENT—Professors Pritchard, Nicholson Almond, Shave, and Williams; General Sir Frederick Fitzwygram, Sir Henry Simpson; Messrs. R. C. Trigger, H. Kidd, J. Malcolm, Thomas Greaves, W. Woods, R. Roberts, J. Gresswell, P. M'Onie, A. Rogerson, F. Samson, W. Walters, J. Keith, C. Hunting, F. Ridler, C. Campbell, A. Edgar, A. Gostling, A. Moore, W. Reed, F. Mahon, J. Nisbet, J. B. Nisbet, H. Olver, Wm. Hunting, W. F. Mulvey, T. Collar, A. Rutherford, W. Hill, A. Gibson, R. Cartwright, G. King, John Dollar, H. Legge, J. F. Simpson, Wm. Dollar, J. H. Brown, senr., H. Gibbings, F. Gibbings, D. M'Gill, J. Rowe, Fred. Smith, T. Briggs, A. Harris, J. MacQueen, J. Lambert, C. Hartley, J. C. Bonnett, H. Singleton, A. L. Butters, M. Clarke, J. Evans, C. Lowe, C. Fleetwood, T. Leather, J. J. Parr, J. Gillingham, C. Rose, F. Willett, F. Kendall, G. Gould, T. Corby, A. Wild, J. Fraser, W. T. Wilson, E. Edwards, W. Garside, W. Barrett, Wm. Wilson, H. W. Stevens, J. Ward, J. S. Hurndall, A. Jacobs, T. Stidston, H. Rogers, A. Wheatley, J. Barford, B. Glover, G. A. Stanham, H. Dyer; Mr. Geo. Thatcher (Solicitor), and Mr. A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

*Scrutineers' Report.*

The SECRETARY read the report which stated that the voting for the members of the Counsel was as follows:—Mr. Albert Wheatley 846, Mr. F. Raymond 842, Mr. W. Whittle 817, Mr. J. Burnett 817, Mr. A. W. Mason 786, Mr. J. Nisbet 774, Professor Pritchard 496, Professor Axe 387, Mr. F. W. Wragg 363, Professor Duguid 334, Professor Shave 236.

The PRESIDENT declared Messrs. Wheatley, Raymond, Whittle, Burnett, Mason, and Nisbet to be duly elected members of the Council.

On the motion of Professor WILLIAMS, seconded by Mr. WALTERS, the minutes of the last annual meeting were taken as read and confirmed.

Mr. GREAVES seconded the motion, which was agreed to.

Mr. DOLLAR, sen., congratulated the members on the change that had been made in the Council, and said that it would mark an era in the history of the profession. He also moved:—"That this meeting resolve that the New Charter will provide for the abolition of the 9th Clause; will provide for the abolition of a dual appointment; and will provide for the election of the whole of the members of the Council by the profession."

Mr. GARSIDE seconded the motion.

Mr. RUTHERFORD suggested that the three points in Mr. Dollar's proposal should be discussed separately.

Mr. DOLLAR said he preferred to have the proposition discussed as a whole.

The PRESIDENT, in moving the adoption of the report and balance-sheet, said he was very pleased to see so many members of the profession present, and from the number of voting papers that so much greater interest had been shown in the election of the members of the Council than formerly, which he looked upon as auguring well for the future. No doubt there had been wonderful alterations in the election, which he hoped would tend to the benefit of the College, and also to that of the individual members of the profession. It would be seen from the report that at the membership examination 745 students had been examined from the various colleges, as against 740 in the previous year, 125 of which had obtained the diploma of membership, against 138 in the previous year. From that the inference might be drawn that the examinations had not, at all events, been less stringent than before, which fact he thought, notwithstanding the remarks which had emanated from some quarters, spoke well for the manner in which the duties of the examiners had been discharged. Passing to the Fellowship examination, they found from the report that fourteen gentlemen had been awarded the diploma, which was exactly double the number who had passed in the previous year, and in addition six had passed during the last week, making in all twenty Fellows added to the former number. Coming to the question of general education, they would observe that considerable alterations had been recommended by the Council. Firstly they had, so far as the certificates of the College of Preceptors were concerned, their limitation to first class or first division of the second class, which was a considerably higher grade than formerly existed. They would also observe that whereas formerly the students were only required to pass a preliminary examination in one language, either Latin, French, or German, the recommendation of the Council was that the students must now pass the examination in Latin, and also in either French or German, which alterations were to come into force on the 1st September. The certificates of the College of Preceptors were greatly increased in stringency and efficiency, which everyone would be glad to see; but he questioned very much whether it was a proper thing that such an advance should be made to come into operation at such a short notice. He would not have objected to the increased stringency if more time had been

given. However, they had been agreed to and passed, and the principals of the colleges had been making arrangements for them to be carried out according to the wishes of the Council. He had, however, received a written communication from the College of Preceptors in London, and also from the Educational Institute of Scotland, saying that they were very much surprised at the action taken by the College of Veterinary Surgeons, and the latter had added that, if those operations came into effect on the 1st September, and carried to their legitimate end, ninety per cent. of the students attending the College would be rejected. He had laid these communications before the Council, and the result was that the question of matriculation examination had been remitted, and he had no doubt the Committee would deal with it in a manner which would give satisfaction to the profession and also to the colleges and students. The alteration of the regulation and bye-law was simply this: Formerly, students who had passed all their examinations except the practical section of the final, had had to come up for their final examination on practical subjects within twelve months; that period had now been extended to three years. Personally he was not satisfied with the alteration, as he did not think it was to the advantage of the profession that a student should be allowed to wander about the country for three years before obtaining his diploma. It might, probably, be to his advantage to be allowed eighteen months or two years, but he thought the term fixed was too long. He was afraid some of them would forget to come back, and that they would have an addition to their ranks of would-be students that they did not desire, and he hoped this matter would be taken into consideration by the new Council. He had not acted upon the committee with regard to the Farriers' Company and examination and registration of shoeing smiths, or had much to do with it, but there were many gentlemen on the Council who would answer any questions concerning that. He went into the matters fully because he was anxious that everything should be laid before the members in a straight and open manner, so as to prevent gentlemen putting questions unnecessarily, and also to prevent a feeling or opinion getting abroad that information was only supplied because it could not be avoided. Their object was to make a plain, unvarnished statement of their work during the past year. As President of the College, he had interested himself very much in the International Congress of Hygiene and Demography. Most of the members knew that the principal educational institutions of the country bearing upon the subject had appointed delegates to that congress, and had subscribed considerable sums of money, and he had felt it his duty to induce the Council also to subscribe to it, to which request they had very handsomely responded with a donation of £50. His impression was that that was only what they ought to do. With regard to the question of Koch's reputed remedy for Tuberculosis, the members knew they had voted a sum of money for the purpose of testing its value; the results had been slightly conflicting so far, speaking for the Glasgow College, and as they were not quite satisfied with them they could not report in such a way as they could wish. Experiments, however, were still being carried on, and the members might rest assured that the money they had voted was being expended legitimately; and more money had been subscribed. He hoped good results would come from it, but it was premature to give any further expression of opinion upon the matter. There could be no doubt that a Council such as theirs ought to do all they possibly could to found bursaries, and the proposition was that £50, or even a larger sum, should be granted for the purpose. They had a difficulty in getting funds, but, as they would see from the report, £50 had been set aside annually as a nucleus for a bursary. He knew of a sum of money which he thought might very wisely be appropriated and added to that amount, and he felt sure that there were members of the pro-

fession who would be glad to contribute something, so that it might be utilised in some way or other in conferring an honour upon a gentleman whose memory was green in their recollection, and who, during his life, had done as much, if not more, than any other member of the profession for students; he referred to the late Professor Steel. He knew that many of them were interested in the new Charter, and in order that it might suit their purpose for years to come, he had taken upon himself to endeavour to obtain information from every source. They had looked at the charters and bye-laws of similar institutions, so that whatever they did might be well considered. They had had a great many meetings, and he thought that every member of the Council had done his duty so far as lay in his power, to bring about a good understanding. Under the head of registration they would see that some of the members had been guilty of conduct worthy of their being removed from the list of members, and one name had been struck off the register. They had also obtained convictions against three individuals for using the term "Veterinary Surgeon." They had also had a test case where individuals had used the term "Veterinary Shoeing Forge," which was a very common thing in Scotland. So far they had been successful on this point. With regard to the obituary he felt, as they all must, that they had lost one or two very valuable members during the past year. They had lost the valuable services of Mr. Wood as an examiner, and a very valuable member in Professor Steel. He hoped the memorial, for which many of the members were so anxious, would become an accomplished fact. Money was now lying in the hands of a certain person, and the College had a right to contribute in order to make the memorial fitting to the occasion.

Mr. BARRETT recommended Mr. Dollar to withdraw his combined proposition, and substitute three separate ones.

Mr. DOLLAR declined to accede to the recommendation, and said he was supported by 1,200 members of the profession.

Mr. BARRETT said he was glad that the Council had complied with the almost unanimous wish of the meeting last year, that Latin should be inserted as an obligatory subject. He should, however, like to know what was to be the standard of examination. If the paper was very simple, and as a pass could be obtained by thirty per cent. of the marks, the greatest novice might succeed, while it might be rendered so difficult that almost every student would fail if the regulation were enforced on the 1st of October.

Professor WILLIAMS said that the subject had been sent back to the Committee.

Mr. GOULD said that the ninth Clause had certainly been the cause of great injury to the profession, and he maintained that the election of the whole members of the Council should be by popular vote, and that none but the Vice-Presidents should be elected by the Council. On the other hand, he considered that the members of the different colleges should have a fair representation on the Board of Examiners. Unless Mr. Dollar would separate his proposition, he (Mr. Gould) should be obliged to vote against the proposal.

Mr. CORBY said there was nothing in Mr. Dollar's resolution interfering with the adoption of the report, and that his proposal could be submitted as an instruction to the Council after the report was adopted.

Mr. NICHOLSON ALMOND suggested that the Charter should be submitted to the members before being presented to the Privy Council.

Mr. THATCHER (Solicitor) said it was customary for a petition to be first prepared, and submitted to the Privy Council. That petition would set out the changes that were desired, and the reasons for them, and it would in the ordinary course be submitted to the general body of the profession. If the

Charter were desired, it would be essential to obtain as many signatures as possible.

Mr. HUNTING inquired whether previous Charters had been submitted to the profession for signature.

Mr. DOLLAR said that neither his signature, nor that of anybody else that he knew had been asked for, although he had been a member of the profession since 1844.

Mr. NICHOLSON ALMOND hoped that steps would be taken to submit the provisions of the Charter to the members before the next annual meeting.

Sir HENRY SIMPSON said the members had the power, under Bye-law fourteen, to request the President to call a special meeting for the purpose.

The PRESIDENT said the matter was in the hands of the Council, but he had no doubt they would be guided by the expression of opinion given on that occasion.

Mr. BARRETT said he presumed that the Council would be only too pleased to carry out the expressed wishes of the profession.

Mr. RUTHERFORD said he thought the question of the election of Vice-Presidents was too small a matter to be discussed, but that the dual appointment was a matter that should be seriously considered before altering the present system. It was the duty of the profession to make certain that the examinations were efficiently conducted. Efficiency should be obtained from whatever source, in or out of the profession, and from among the members of the Council or not. There should be no rule excluding any member of the profession from being an examiner.

Mr. HUNTING said he saw no reason for separating the three branches of Mr. Dollar's proposal. The election had shown that the profession had decided almost unanimously that all the three changes proposed should take place. Mr. Rutherford's remark as to electing examiners from every section might be purely logical, but they ought to take into consideration the weakness of human nature. The Charter of 1844 provided that teachers of schools should not be examiners.

Sir HENRY SIMPSON said that under the Charter a professor was not ineligible as an examiner except in regard to the students of his own college.

Mr. HUNTING said it was far worse for an examiner to examine a rival's students. No slur was cast upon the professors, but the object was to prevent the possibility of examiners labouring under any imputation. The examinership was the highest post of honour, except the Presidency, that the profession could confer upon one of its members, and the higher the honour the more carefully it should be guarded. It was not a good arrangement for a man to be able to sit at the Council and vote for his own election for the highest honour in the profession. Last year no fewer than nine members out of thirty on the Council were examiners. The present election had reduced the number to two, who would, perhaps, meet the wishes of the profession by resigning their extra appointment within the next few months. The matter had not been sufficiently discussed perhaps from a fear of wounding the susceptibilities of members of the Council. A member of the House of Commons, when appointed to a post of profit, had almost to submit to re-election. Members of county councils and vestries were also prohibited from holding any office of profit under themselves.

Mr. EDGAR said that there was now hope for younger members of the profession. With regard to the alteration of Regulation seventeen he did not see why it should be necessary to give one man a period of six years in which to obtain his diploma, and another only three years. It was a disgrace to the profession that the present condition of things should be possible, and that unqualified men should be able to palm themselves off on the public as qualified. There seemed to be some diffidence in keeping the ranks of the

profession pure, since men, who had been proved guilty by the law of England of offences disgraceful to the profession, had not had their names removed from the register. He wished to know if the Council intended to press adequately the authoritative statement recently made that it was illegitimate for a non-member of the profession to adopt the word "veterinary." If a man had no right to the title he should not be allowed to use it, and notice should be sent to every man contravening the Act.

Mr. THATCHER said that the person whose name was struck off the register had been guilty of embezzlement. In the other cases the persons had been charged with conduct, "disgraceful in a professional respect." One was for cruelty to a horse, and the Registration Committee after investigation came to the conclusion that the man had not been properly represented before the magistrates, and that if certain facts had been brought forward he would not have been convicted. The case, therefore, was not considered to be one that should be visited with the extreme penalty. The other case was that of a registered practitioner whose name it was alleged had been placed upon the register by fraud, but the voluminous evidence before the Committee was so complicated that it declined to take the responsibility of interfering in the case, the act having been done six or seven years ago. With regard to the notices mentioned by Mr. Edgar, since the prosecution referred to, a special form of notice had been prepared calling attention to the conviction, so that every one receiving it was without excuse. The effect of the notices in almost every case had been that the word "veterinary" had been removed, and there was at present no complaint before the Council of that particular offence. With regard to Scotland, a resolution had been passed that as soon as a test case could be found in that country, a prosecution should take place as in England.

Mr. EDGAR asked if the Council acted simply on the decision of a police magistrate.

Mr. J. F. SIMPSON said it was impossible for the Council to move in the matter. The difficulty should have been foreseen; the Council had no power to go on. With regard to the improper use of the word "veterinary," it was impossible that the Council could know all the cases unless they were reported to it. No report had ever been presented without the fullest investigation being made.

Mr. HURNDALL said he had heard that the intimations sent into the Council had not received the complete attention which it was desirable they should receive, and he should be glad if the statement could be authoritatively contradicted.

Mr. J. F. SIMPSON repeated that every complaint sent into the Registration Committee had received the amount of attention and consideration which it required, but whether it had received the attention that aggrieved persons considered necessary was another matter. The committee were guided by the Act, with the assistance of the solicitor who was always present.

Mr. EDGAR said he objected to be a common informer. If he gave any names of offenders, would the Council take all further responsibility?

Mr. J. F. SIMPSON said that the Council would do so.

Mr. MACQUEEN suggested that the balance of the £250 voted for testing the value of Dr. Koch's treatmeat for Tuberculosis should be devoted to the employment of an inspector, who should seek out cases in which the Act had been contravened.

The motion for the adoption of the report was put and unanimously agreed to.

Mr. DOLLAR then brought forward his resolution as an instruction to the Council.

Mr. GARSIDE seconded the motion.

Mr. CORBY moved as an amendment, that the proposal with regard to the dual appointment be omitted.

Mr. BARRETT seconded the amendment.

Professor WILLIAMS expressed a hope that the Council would be unanimous in its opinions, and desired that the clauses of the motion should be separately discussed.

Mr. KIDD said it appeared from the voting that the majority were in favour of the dual appointment being done away with; but he did not know what would be the result if the profession at large was of contrary opinion.

General Sir FREDERICK FITZWYGRAM said if the motion was put as a whole he should be obliged to vote against it, although he agreed with two of its propositions. He hoped the meeting would negative the proposal as a whole, and allow each clause to be put separately; they would then ascertain the feeling of the profession, and be able to apply for a new Charter as a united body. If the feeling of the meeting went against the feeling of a new election, he would suggest that a future period, before applying for a new Charter, another general meeting of the profession should be called.

The amendment was then put to the meeting and negatived, twenty-two voting for, and thirty-eight against.

Mr. DOLLAR'S motion was then put and carried.

Mr. BARRETT said that recently many cases had come under his notice of horse owners employing men who were neither registered nor qualified, and he would, therefore, move the following resolution: "That, in the opinion of this meeting, members of the Royal College of Veterinary Surgeons decline to attend professionally for those horse owners who habitually employed non-qualified practitioners."

The motion was not seconded and, therefore, fell to the ground.

Mr. ROWE asked if any steps had been taken to remove the framework which now disfigured the windows of the Council Chamber, or whether they proposed to replace the same by a more suitable structure.

The PRESIDENT said that a meeting had been held that morning, but that no decision had been arrived at, and, therefore, the subject was still under consideration.

Mr. ROWE said that that being the case, he would move as an instruction to the Council: "That the existing framework be removed with as little delay as possible."

The motion was not seconded.

Mr. TRIGGER moved, and Mr. DOLLAR seconded, a vote of thanks to the scrutineers, which was unanimously adopted.

On the motion of Mr. J. F. SIMPSON, seconded by Mr. RAYMOND, a hearty vote of thanks was accorded to the President, and the proceedings terminated.

## SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

(*Continued from page* 379.)

The first thing I generally do is to give a large dose of morphia subcutaneously, and if the pains are severe, and the morphia does not seem to be taking effect, I follow it up with a good dose of tinct. opii, which generally reduces the force of the pains. I never found it necessary to chloroform the cow, although I have used it to stop paining in the mare. After the medicinal part of the business has been attended to, get the cow's hind quarters raised —I generally manage to get a door and place it half-way up the standing, and prop it up behind with trestles or logs. I then have the uterus well swilled with tepid water, to wash all the dirt and straw off, and if any of the fœtal membranes are adherent, remove them; this done, I get two men to hold a

clean sheet under the uterus, and if it is not swollen, oil the organ well around the vagina and upper part of womb with ol. olivæ, ol. colza, or lard. I often use a mild turpentine liniment. Get a good man, with *short nails and clean hands*, to assist you to hold the organ when the pains come on, and not let them get the better of you. I always work it in at the vagina, and *not* the fundus, as I believe some practitioners do. It is rather tedious, and sometimes difficult at first, but by using gentle force, and holding it to the place you have got it to—without being *rough*—when pain comes on, it will gradually glide in with little effort on our part; but when the pains come on it is very necessary to just hold it *firmly* to its place. When I have got it as far as I can I get a man with a long arm to push it in at the fundus as far as he can reach. I get a pail of spring water, and put my arm in it, and then put my cold arm into the uterus to induce contraction; apply a truss pretty tightly and give a good anodyne drench. I leave three more anodyne drenches to be given in the event of the pains continuing; order the cow to be well watched for some time after, as she might evert the uterus again if the truss got twisted, or she got her hind quarters off the inclined board. If the uterus is much swollen I bathe with astringent solutions, as alum, tinct. ferri perchlor., or even milk and water, and if this does not reduce the size of it, scarify. If there is any tearing it is a good plan to use some mild antiseptic in the water. When a great deal of hæmorrhage has taken place it is a more serious matter—you can judge if it has been excessive by the visible mucous membranes; if blanched, my experience has been that the uterus can be returned with great ease, but the case has terminated fatally. It is wonderful how a cow will come round after a bad case of eversion of the uterus with good nursing. The next disease I have on my list is an old friend of ours:—

*Parturient Apoplexy*, a disease that ought to be rechristened "Parturient Cattle Plague." There will be nobody in this room who is not fully acquainted with the disease in all forms; but if there is anyone who can *positively* tell its exact pathology, and an unfailing treatment, he deserves a pension. I do not think it would be any use my taking up your time with enumerating the symptoms, for you are all familiar enough with them. I should just like to mention one thing that I notice and that is, the temperature is always *below* normal in the first stage. I have seen it down to 96° F. but generally 99° F. is about the temperature I have found. I mention this to show the absurdity of calling the disease "Milk Fever" when we find a state of things exactly opposite to that of fever. I admit that we have inflammation at a latter stage in *some* cases, but not in all, and I think then it is very often due to re-action, through giving too much spirits, and of course it may result from the congestion of the system, or the action of various poisons in the blood. There is often a rise of temperature of 1 or 2 degrees without its amounting to actual inflammation, due I believe, to rapid oxidation after the several organs have been at a standstill, and an extra effort is made by nature. Of course this may result in inflammation if not counterbalanced by judicious treatment.

What is the *cause* of Parturient Apoplexy? This is not easy to account for in most cases. Cold is blamed in many cases; in fact, if it was not for cold we should be badly off, as we can blame it in all cases where we are puzzled for a cause, not only in this but in other diseases. Plethoric animals are more liable to the disease than lean ones, if deep milkers, but lean cows which are good milkers, if put on to a rich diet a short time before calving are, I consider, likely subjects. The artificial way that cows are forced a month or two before calving, with the object of making them look blooming and full of milk when they calve, is a very likely thing to predispose the animal to an attack; hereditary pre-disposition is a factor I have no doubt, and only wants an exciting cause to bring about the disease.

The pathology of Parturient Apoplexy is very hazy; in fact, we have only theory for it, as neither *ante* nor *post-mortem* examination teaches us very much. The pathological theories that I am about to mention are the result of very close observation of the symptoms and *post-mortem* appearance of the cases I have seen during the last fourteen years. I am sorry to say that owing to carcases of cows not being used in Lord Zetland's kennels, I have not had an opportunity of making a *post-mortem* for the last few years, but I must confess what I have seen has not taught me a great deal. I think that there can be little doubt that the symptoms result from derangement of the nervous system, either from some irritation, or as a result of blood-poisoning. If such is the case, what causes the derangement of the nervous system. One thing we must not lose sight of—we *never* meet with the disease in a cow that is a poor milker, and we do not meet with it until after the third calf, at least as a general rule. Does not this point out that we must look for the primary cause in the lactiferous system. I do not believe that the causes and pathology of the disease are identical in every case, hence we must have more than one theory to fit in the puzzle. With regard to blood-poisoning, my idea is this—Is it not possible for the mammary gland to be so gorged with colostrum corpuscles that they find their way into the circulation in a similar way to that in which bile finds its way into the blood from engorgement of the liver, and so cause a form of intoxication or poisoning, and by the action of that poison on the nervous system the whole body becomes affected, unless elimination takes place by the various channels? Of course there are other forms of poisoning, but they are secondary, as in uræmia, and noxious gases in the system, etc. Another cause may be the continued pressure on the nerves connected with the glands, caused by the over-distended udder injuring the centres of the sympathetic system by reflex action, thereby partially paralysing their function, and there is no doubt that for a time, varying from a few hours to several days, the whole body is in a state of partial paralysis. When the milk comes away freely we generally, but not invariably, have an improvement in the symptoms, but from the general congested state of the circulation, complicated with the arrest of the functions of the various organs, the nervous system cannot regain itself, the paralysis increases, until for want of its governing power the complicated working of the whole body is at a standstill and death results. I have a strong idea that the mammary gland has a deal to do with the symptoms we see; one great peculiarity of the disease is the rapid recovery we see in a cow that may be comatose, yet when we see her two hours later she may be sensible, and rise shortly after. A significant fact is that we do not see a cow improve unless her milk is beginning to flow.

I am aware that the theories I have named will not bear out in cases where the cow has been milked some days before calving. Here the cause is probably due to plethora, the blood being in such a rich state that the slight drain was insufficient to maintain the balance, and the nervous system could not stand the extra pressure, when even this slight relief was terminated at parturition. I think it has been suggested that Parturient Apoplexy is caused by milking the cow too clean the first time after calving, the result being collapse of the acini and lactiferous ducts, and the retention in the blood of the constituents of the milk which cause a sort of intoxication or poisoning; but then there is the question of cows that show symptoms of the disease before calving, and others that have been milked some days before, and again those where the disease does not occur until some *days after* calving. Are not the colostrum and fat cells of the milk formed in the gland, and not carried there by the blood?

With regard to the treatment, the more I see of the disease the more I think that we have *over-drugged* the poor cow. It is not an uncommon

thing to hear of a cow having had two or three pounds of mag. sulph., fourteen pounds of treacle, a quart or two of ol. lini., and a bottle or two of whisky, etc., before the veterinary surgeon comes on the scene; *then* she catches it again—stimulants, febrifuges, anodynes, are all horned into her in turn—if it cannot be got into her with a horn a hole is made into her rumen, and it is poured in that way, or even the rectum is made use of as an inlet. Now, gentlemen, can you wonder at the poor animal giving up the ghost under these circumstances?

The most important thing in the treatment of this disease is the nursing. Keep the cow warm, and have her propped up on her sternum; if she cannot do it by herself pack her up. I find it a good plan to get a number of bags tightly packed with straw; as they are handy to move about as the cow changes her position, and they make good supports for her shoulders. I have her milked every three or four hours whether she gives any milk or not, for the action of milking encourages the flow of milk. I generally use a catheter, or if I have not got one with me, I insert my finger into the bladder with the desired result; I think this stimulates the kidneys to action. It is a good thing to give an enema of warm water, although I must confess that I don't always practice what I preach, as the pump is so unhandy to carry if you are riding, and you cannot get water to gravitate into the bowels from the funnel if the cow is down. Cold water douches to the poll, and blisters also sometimes seem to do good. I have generally put a good mustard plaster on the back, but I am now trying the non-blistering treatment, and so far the results are quite as satisfactory. With regard to the medicinal treatment, if the cow is in the first stage and there is excitement, I do not give stimulants. I am trying the potass. bromid et chloral hydrate treatment in such cases, and my experience so far is three recoveries and two deaths. I must say that it is not as good a percentage as I had been led to expect from the report of Mr. T. M. McConnell. If the cow is dull from the first, I give a good dose of whisky, followed by small doses of ammon. aromat. et tinct. arnica et tinct. nucis vomicæ given at intervals of three or four hours. I think tinct. arnica a particularly valuable drug on account of its diaphoretic properties. If there is difficulty in swallowing, I give a subcutaneous dose of nux vomica et æth. sulph., and leave some balls containing ammon. carb. nux vomica et ol. menthæ. I consider it a critical time when the temperature is rising, as if it gets over 103° F. it wants checking, or we have a state of fever which is difficult to combat. I find Fleming's tinct. aconite, combined with tinct. opii, to lower the temperature the best of anything. It is very discouraging to get your case so far improved that the cow holds her head up, the milk coming freely, breathing natural, yet she cannot rise. I have seen them try, and try again, and then give it up altogether, unless they are helped. If they do not rise in three days after having recovered consciousness, I have then lifted up, and their legs well rubbed, if they stand then for one minute even, they stand for two or three next time, and so go on until they rise by themselves. But sometimes the beast will not try to rise, and will not be lifted, or at least will not make any use of her legs when she is lifted. I have known a cow refuse to rise, and also refuse all food and drink, and die in spite of all I did for her—it looked to me like a complete loss of nervous energy. When a cow tries to help herself she generally succeeds in rising, sometimes without help. The last case I had had been down a week, six men could not get her to stand, but when the owner went into the byre two hours after she was on her legs. I keep giving small doses of nux vomica, unless I see any poisonous symptoms. A smart blister across the loins, or ironing with a flat iron, often seems to be beneficial. A green sheep skin is in great favour amongst some, but I cannot say that I like it very much as it soon putrefies. When the cow will not rise with

this treatment I expect that there is much effusion on the cord, the pressure of which may, in time, cause atrophy of its nerve-fibres. Absorption may take place, but I believe it rarely does so. It is common to see a cow very lame, and partially paralysed in one leg after she has risen, or for her to knuckle over at the hind fetlocks, but I have always found them come right again in time. I may just caution you to examine your case carefully when the cow will not rise, as you might find a fractured leg. I had two such cases in succession, due to the cow falling awkwardly when trying to rise.

Another complication of Parturient Apoplexy is *Pneumonia* resulting from several causes, the most common being the effects of congestion, blood-poisoning, and I believe it sometimes results from giving the cow fluids when she is unable to swallow; some of which finds its way down the trachea and bronchial tubes, causing so much irritation that inflammation results. When the lungs are so congested as to interfere with the breathing, I think bleeding will be likely to give relief, followed up by stimulants and tonics. I have had good results from this treatment, in fact, I feel certain that venesection saved life in more than one instance. I consider Pneumonia after Parturient Apoplexy to be a most fatal complication. I must say that bleeding sounds like a rational way of relieving the congestion of the whole system from whatever cause, and congestion there undoubtedly is. I admit it is an effect and not a cause. But we have to treat symptoms in many diseases. The cause in Parturient Apoplexy I take to be the crippling (if I may use the term) of nerve force, either by poisonous matter in the blood or other indefinable causes, bleeding to relieve the overcharged vessels —if blood will flow, for I have seen cases where it would not—followed by stimulants and nerve tonics sounds like a certain remedy; in my hands it has failed in every case, but that does not say that it would fail in other hands; it is many years since I tried it and I believe I got discouraged through losing three cases in succession. I might not have bled *early enough* which is one important thing, in my idea; anyway, I should like to try the experiment again when the beast is strong, and has not been ill long. The curative treatment being so unsatisfactory, it behoves us to pay more attention to the prophylactic treatment. I own I have nothing startling in that way, what I do is to recommend no change of diet during the month or two prior to calving, give plenty of exercise daily, and medicinally a dose of ammon. carb., nux vomica, combined with a brisk cathartic, the principal use of the cathartic being to counteract the flow of milk; in fact, dealers do not like this drink, as they say it takes the milk away, but this, in my opinion, is the main object with us. The nux vomica and ammon. carb. act as a good nerve tonic and stimulant, anyway if they do no good they do no harm. I order the drink to be given as soon as the cow is about to calve, and when she has calved I recommend a gill of whisky to be given. I have adopted this treatment with very good results, in fact I only know of two cases where it has failed.

*Metritis*, and with it we generally have the complication of *Peritonitis*. This disease is generally met with after difficult parturition, or it may result from septic influence either within, from retention of the placenta, or a dead fœtus; or without from septic germs in the air, such as a cow standing in the same byre with a putrid placenta hanging from her, or any putrefying matter in close proximity. I believe the disease is identical with that known as Blackening in ewes, and like it is highly contagious in animals the first week after parturition. I find it a most intractable disease, although I am glad to say that it is not very common in our neighbourhood. I have tried febrifuges, antiseptics, stimulants, etc., internally, and antiseptics and anodynes into the uterus, but with very indifferent results. I may mention that a cow suffering from Metritis should be isolated if possible, particularly if there are any newly

calven cows in the building. If she cannot be moved, and the other cows cannot be taken out, use plenty of disinfectants about the place. Of course we should remove cows that are long in cleansing if a cow happens to calve at the time.

*Retention of the Placenta.*—This generally happens when the cow calves prematurely; it also happens when the cow has gone her full time, and at times it is an annoying and even dangerous occurrence. I judge the time to remove it mechanically by the state of the cow's health in the first place, and the state of the placenta in the second. Sometimes they putrefy in a very short time, in fact, it may take place *before parturition.* When the calf has been dead some time, as long as the cow is eating well I do not interfere, beyond giving a cleansing drink, but if she goes off her feed, or begins to pain, I think we are justified in removing at once. It is not one of the most pleasant jobs in the world, but it has to be done if we want our patient to recover her health quickly. I should remove a placenta as soon as I see any signs of putrefaction if I had my own way, as the putrid mass must act deleteriously on the system, but some farmers will not have a placenta removed as long as the cow is eating, so I do not do so until there is constitutional disturbance—unless I have a sensible client to deal with. I have seen very grave symptoms from a putrid placenta four days after calving, the animal refusing all food, sometimes down, or if able to rise, staggering about, and standing with difficulty, pulse weak and fast, and temperature elevated. These symptoms are no doubt due to absorption of the putrefactive matter from the uterus into the system. It is often a mystery to me, how a cow can live as she does with such a large quantity of corruption in the uterus. It is not long ago that I removed from a cow a calf in such a state of decay that every bone had to be removed separately, even to the bones of the head; and the soft structures in solution that were expelled in instalments with each pain was something to be remembered—in an odoriferous sense, yet that cow lived and did well. To return to my subject, the most common symptoms that we see from retention of the placenta are loss of appetite, some degree of feverishness, and at times paining. As long as the cow is eating I simply give tonics, and order linseed gruel ad lib., but if not eating, the sooner the placenta is removed the better. I do this by getting a firm hold of it with one hand, and twisting and squeezing it off the cotyledons with the other; having removed it I wash the uterus out with an antiseptic solution. I do not care for the Hydrarg. bichlor., as so large a quantity of the solution is required that I am afraid of poisoning. My fear may be groundless practically, but I am rather shy of experimenting with so irritating a drug. I shall be glad of any information on the subject. I generally leave some anodyne medicine in case of paining; it is a good plan to have a truss also—prevention is better than cure in this instance. I think a good cleansing drink does good a day or two after removing a placenta, as there are generally fragments which the drink will remove. A practice that is often resorted to, particularly when a cow is going to be sent to the market, is to cut the placenta off at the vulva, the remaining half slipping back into the uterus, the os then contracts and we cannot remove it with the hand, it then putrefies, liquefies and is expelled—that is if it does not kill the cow first, as I have known it to do. The only thing we can do is to inject antiseptics and give tonics. I think it is a bad practice tying a weight to the cleansing. I have known it to cause sloughing of the vagina, to say nothing of the pressure on the meatus urinarius preventing the escape of urine.

*Mammitis.*—This is a very troublesome and sometimes dangerous complaint, and one which is a source of very great loss to the farmer, and much annoyance to the veterinary surgeon. I find I cannot treat it with anything like the success I could wish. The symptoms are well known to you all, but I should like to mention one symptom, or rather sequel of this complaint,

and that is Pyæmia. I have had several cases where the induration of the gland would not give way to any treatment, abscesses forming in different parts of the body, reducing the cow to a state of emaciation pitiful to see. I have a case now where the cow had Mammitis caused by a tread on the teat a day or two before calving last summer, and she has had an abscess lanced a month or two ago; this cow eats well, but is in poor condition. This beast was worth £25 at time of calving—£5 would be her value to-day; even where a cow loses one quarter the loss to the owner is £5, which means a large sum to the country in a year. Mammitis is due to a variety of causes, amongst which may be mentioned cold, over-stocking, bad milking, Tuberculosis, treads on the teats, Plethora, etc. The treatment I adopt is to give a cathartic, followed by febrifuges if the fever is high, and warm fomentations three or four times a day, followed by the application of lead liniment with friction. I have also tried soap, belladonna, tereb. and aconite liniment, with variable results. Some farmers cut the teat off the affected quarter, but I consider it a cruel and useless operation. If the gland is no better in two or three days I generally find that the cow loses the quarter; it may regain its function at the next calving, but it too often happens that it is a "deaf" quarter for life.

If resolution does not take place abscesses may form in the quarter, or even mortification may result; the affected quarter sloughing completely off, leaving a healthy granulating surface which I have found to heal rapidly. I have tried the application of iodine, ol. hy., etc., in cases of indurated quarters, but I cannot say that any very good results followed their use. In some parts of the country Mammitis is looked upon as a very fatal disease, but I have not found it so.

There are several other diseases I might have mentioned as occurring during the first month succeeding parturition, but those I have touched upon are the ones most commonly met with, and I think you will admit that I have, though in a very imperfect manner, brought before you enough matter for a good discussion. Our Secretary wanted a *practical* paper: theory may be more poetical than practice, and is all very well in its way, but we must prove that theory to be correct by practical means, or it is useless. The Anti-Vivisection Society bars the way to ordinary mortals gaining any practical knowledge experimentally, so we have to be content with what we can learn by carefully watching the symptoms, and making examinations of our patients in every possible way. One of the most valuable assistants is the clinical thermometer; by its aid you can sometimes detect a state of things little suspected. Then we have greater facilities of making *post-mortem* examinations on our patients than the human surgeon has, and a great deal may often be learned in this way; and last, but by no means least, is the immense aid we often get from the microscope. In the treatment of disease we must not lose sight of the rule: Remove the cause, and the disease will cease. Let us copy nature as far as we can.

In conclusion, gentlemen, I must beg you to overlook the many imperfections and inaccuracies in this paper, and I hope we may all carry some new ideas home with us to-night; the object of these meetings being, as Dr. Cobbold says, "the emancipation of the mind from the fetters of ignorance."

## ROYAL SCOTTISH VETERINARY MEDICAL SOCIETY.

A MEETING of the above Society was held in the Dick College Buildings on Wednesday, March 25th, 1891.

Members present:—Professors Baird, McFadyean, and Walley; Messrs. Fingzies, Barclay, Braes, Harle, Reid, Scrymegeour, Baird, and the Secretary.

In the absence of the President, Mr. Fingzies, Lochgelly, was called to the chair.

The minutes of the previous meeting having been read and confirmed,

Professor BAIRD proposed that Mr. Bowman, M.R.C.V.S., Portobello, be elected a member of the Society.

Mr. R. REID seconded.—Carried unanimously.

Professor WALLEY nominated Mr. Peddie, Mr. Meltam, and Mr. R. Walley.

Mr. BARCLAY nominated Mr. R. G. Robertson.

Professor WALLEY then brought before the meeting the following specimens:

1. *Monstrous Calf.*—An example of a Celosomian monster (Saint-Hilaire), or, according to Gurlt, a *Schistocormus reflexus.*

The above noted specimen was forwarded by Mr. Hawthorn (student), pupil of Mr. Cooke, veterinary surgeon, Scarborough. On the morning of the 22nd of March Mr. Cooke received a message from a farmer to the effect that he would like him to come at once to a cow calving. Mr. Hawthorn on arrival found that the cow had succeeded in expelling the fœtus without assistance. The farmer gave the following history of the case, viz., that the cow commenced straining about 5 a.m., and at 7 a.m. he examined her and found, as he thought, the intestines of the mother protruding into the vagina; and what was more interesting, he stated that the cow had gone her full period, in fact was ten days overdue, the calf being evidently alive up to birth. The fœtus presented the usual characters of a Celosomian monster, the spine being twisted in the form of a sigmoid flexure, and the whole of the internal organs being situated external to the body. This fact doubtless led the farmer to suppose that he had to deal with the intestines of the mother.

From the great space occupied by the calf, its greatest circumference being 35 inches, it may be looked upon as a marvel that the animal was able to give birth to such a creature without assistance.

2. *Double Parasitic Monstrosity.*—This specimen was forwarded by an old pupil—Mr. Hugh L. Leadbetter, of Segeswood—with the history that it had been obtained from a Leicester ewe, the same animal having previously given birth to a healthy and well-developed lamb. The interesting features of this monstrosity were that it was practically a double fœtus united at the pelvis, but that in the case of one the whole of the head, except one ear, was awanting; in every other respect development was perfect, and the fœtus was well nourished, as is shown by the fact that it scaled thirteen pounds minus the viscera. It had evidently been alive at the moment of its birth.

The mother was a half-bred (Cheviot and Leicester) ewe. She gave birth unaided to a big strong lamb, but some time after again evinced parturition pains, when the shepherd made a careful examination, and, finding a very complicated state of matters, eviscerated the parasitic fœtus and delivered the ewe. The ewe and the living lamb are doing well.

3 *Diaphragmatic Hernia of the Liver in a Cow.*—This lesion was discovered on making a *post-mortem* examination of a cow, in whom during life there was presented evidence of Tuberculosis.

About one-third of the upper part of the liver had passed through an aperture in the tendinous portion of the diaphragm, the edges of the aperture being firmly adherent to the external surface of the liver, and (probably by contraction in the healing process of the wound resulting from the diaphragmatic rupture) at the seat of the hernia a deep indentation was formed in the liver, which was markedly cirrhotic throughout its whole structure. The herniated portion of the liver was firmly adherent to the right lung.

4. *Thoro'pin in a Cart-horse—Effects of effusion into the sac during an attack of effusive fever.*—This animal was under the treatment of Professor

Walley for Thoro'pin, accompanied by much lameness, at the date on which it showed symptoms of Influenza, the hock having been blistered first, and setoned with only partial benefit.

Immediately at the outset of the attack of Influenza the diseased bursa became enormously distended, very tense, and excessively painful. The pain was so great that the animal could scarcely bear any weight on the leg, and during the course of the malady the recumbent position was constantly assumed. On the subsidence of the disease the pain in the bursa passed off, and in the course of a short time the animal walked nearly sound. In order to hasten recovery, and with the object of obliterating the bursa, Professor Walley drew off some of its contents and injected three separate times a moderately strong solution of iodine. Finally he laid the upper part of the sac open and injected a small quantity of strong tincture of iodine. The result of this treatment was shown in the firm state of the tissues round the bursa, and in the removal of the lameness.

Professor WALLEY then read a paper on

"THE RECENT OUTBREAK OF EQUINE INFLUENZA."

MR. PRESIDENT AND GENTLEMEN,—In considering this subject I do not intend to enter into a discussion on the vexed question of the differentiation of the various forms of disease generally classed under the head of Influenza in this country, nor do I intend to occupy your time by entering into an argument as to the advisability or otherwise of using such a designation as Influenza as applied to any particular form of disease. The term has from use and wont become a recognised synonym, not only in veterinary and in medical literature, but also amongst horsemen, so far as the horse is concerned, and amongst the lay public so far as man is concerned. Fault is often found with our nomenclature, but if such is justifical in the case if veterinary, it is equally applicable to medical terminology, and I fancy that those who are most ready to raise quibbles on this point would, if requested to do so, in the light of our still imperfect knowledge of disease, find it a difficult task to effect any real improvement in our present methods.

The term *Influenza* is an acknowledged meaningless term, or only expressive as showing that the animal creation labours under the influence of some all-depressing agency, the exact nature of which cannot be accurately defined; the term is really of Italian origin, and in that language literally signifies *influence.*

Personally, I have no reason to depart from the position I have long taken up in regard to epizootic equine Fevers as they come under one's observation in this country, *i.e.*, that I only recognise three typical forms thereof, viz., catarrhal, bilious, and effusive Fever; and that other types that have been described are mere modifications or complications of one or other of those specified. To illustrate my meaning I may relate an instance which came under my observation some years ago. You will, in all probability, be familiar with the fact that at various times there has been described an epizootic Fever under the title of *Cerebro-spinal Meningitis*, and that such an affection was said to have prevailed in London and several of the home counties some years since. At the period of its prevalence I called upon the late Professor Robertson (shortly after his professorship commenced at the Royal Veterinary College) in London, and as I approached the main entrance of the institution I observed the Professor in conversation with a well-known veterinary surgeon, who had under his charge a large stud of omnibus horses. On my approach I was informed of the purport of the conversation, which was in relation to the prevalence of Cerebro-spinal Meningitis in some of the metropolitan stables.

The veterinary surgeon in question stated that he had several cases of the

disease under treatment, and courteously invited Professor Robertson and myself to visit the stables and examine the horses. On arriving at the establishment we were at once conducted to the hospital, and our attention was directed to a horse standing in slings. I had no sooner entered the stable than I detected an odour familiar to all who have had much experience in putrid Pneumonia, and as I passed alongside the horse in question the odour became more pronounced. One inspiration of the expired air from the lungs of the patient was sufficient—he was the subject of putrid Pneumonia. After this we were shown several other horses which were said to present the typical symptoms of the affection, but in none of them did I succeed in identifying any special form of equine epizootic disease. I was of the opinion then, and remain of the opinion still, that any cerebro-spinal manifestations associated with these cases were purely of the nature of complications, such as are occasionally encountered in the progress of such maladies as the one under consideration.

As is usually the case when an extended outbreak of such a malady occurs, the recent epizootic was looked upon by uninformed persons as a new disease. It is as old as the veterinary art, and probably as ancient as the horse itself, but the recent outbreak assumed unusually virulent characters and developed complications which in other epizootics have fortunately been exceptional.

The *history* of the outbreak is interesting. Early in the autumn caess occurred in some of the northern English towns, and I myself saw a number of horses suffering from the malady in the month of October, in a large stud under the care of an old college friend. My colleague, Professor Baird, had under his charge a large stud of horses in the city, but it was not until the beginning of November that it came under my cognizance. From this time the disease spread rapidly in my practice, and did not cease until the latter part of January of the present year.

*Nature of the Malady.*—In the light of our present knowledge, and in view of the course and effects of such maladies as the one under consideration, I suppose there will be found none to question the micro-parasitic nature of the disease. The only matter open for argument is the exact character of the micro-organisms. Epizootiologists recognise a form of zymotic maladies under the head of miasmatic-contagious diseases. This dual term implies to most minds that the actual cause or germ is capable of a twofold existence—an existence in the body of an animal and outside the animal organism altogether—and not only a capability of so existing, but of multiplying, under these differing conditions. Of this nature, in my opinion, is the virus of Influenza, else how can we account for one of its most characteristic features, viz., *periodicity?* and how can we account for the fact that for many months no cases occur in any part of the country, and that after a long period of rain, or of a moist condition of the atmosphere, outbreaks take place and dissemination proceeds apace?

No other theory will explain the periodical epizootic cases to which we are accustomed, nor the erratic manner in which its attacks are disseminated. It is all very well for the popular fancy to attribute its production to atmospheric influences; such forces could no more produce it than they could generate Smallpox or Glanders. Again, if Influenza bore a casual relationship to Glanders, Cattle Plague, or Rabies, there would be no recrudescence in a given locality after an outbreak had been once got rid of.

As to the manner in which the virus produces its effects on the animal's system, there is, very legitimately, much room for doubt and for diversity of opinion.

We must, I think, assume that the virus is received into the system most largely by inspiration; that having gained access thereto it rapidly multiplies, and induces a more or less pronounced febrile condition; that the intensity

of this febrile condition is regulated by the activity of the virus, by the capability or incapability of the host to resist its effects, and by the activity or otherwise of the emmetories. Thus we find that for a given period and in certain studs Influenza runs a benign and a comparatively rapid course, while in others it is not only extremely virulent, but its duration is materially prolonged; and, again, we find studs of horses resisting its influence altogether, or in a very large degree, while in the case of other studs the percentage of cases is abnormally high; and yet again we find the horses of a stud performing their daily work and resisting the disease for weeks and months, although mixing with other horses, a large proportion of whom became affected with the malady, and just as the epizooty appears to have expended its force, yielding to its malign influence. Immunity is, in some cases, probably due to the system having been protected or fortified by a previous attack, but this does not hold good in all, as some horses suffer from repeated attacks of the malady at comparatively short intervals of time.

The fever induced by the action of the germs on the great nerve centres is not its gravest aspect. We find this in its local manifestations, in the conjunctival œdema, in the cellular œdema of the limbs, in the acute dropsy of the joint capsules and the synovial bursæ; in the congestion and inflammatory lesions localised in the respiratory organs, the feet, and the bowels; in the grave disturbance of the uterine circulation, which culminates in the premature expulsion of the fœtus in pregnant animals; and in the great tendency to septic processes.

As in the case of other virus we must acknowledge that there is here not only marked disturbance of nerve function and annihilation of nerve force, not only marked interference with cell function and rapid destruction of the cell tissues (histotysis), not only a catalytic or destructive effect existing in the cell elements of the blood, or a material weakening of the walls of the minute capillaries, but that there is an actual inflammatory condition of the capillaries (a capillitis) established, and to which we owe the rapid transudation of the blood plasma into the connective tissue.

We may talk glibly of "epizootic cellulitis," but the essence of the malady is not a cellulitis, it is a capillitis, and to my mind the theory lately promulgated by Liebreich as to the therapeutic action of the cantharidine largely explains the action of the virus of Influenza in the capillaries. It has for long been known that one of the most prominent lesions in cantharidine poisoning was inflammation of the minute vessels of organs or membranes, and as a consequence thereof of transudation of blood plasma with the meshes of the connective tissue or into cavities. Are we, or are we not, justified in concluding that either by their own influence or by the influence of their products the micro-organisms of Influenza set up a capillitis of more or less universal distribution, and that to this, as well as to the altered conditions induced in the blood itself, is due the character of the local manifestations of the disease?

*Fatality.*—Probably within the memory of the present generation of veterinary surgeons in this country no equine epizooty has claimed such a holocaust of victims as did the recent outbreak. Certainly it exceeded in virulence anything of which I have had experience, and this was due mainly to the fact that its worst feature was a marked tendency to septic processes, especially in connection with pulmonary and enteric lesions. Although an attempt was made in one quarter to minimise its destructive effects, I have good reason for expressing the opinion that if the truth was spoken, every practitioner in the city had to record a tolerably large proportion of deaths, and that these collectively did not fall far short of a couple of hundred, though to the initiated it must be quite plain that the fatality was regulated largely by the class of animals attacked (the mortality being almost *nil* in

light horses), by their differing conditions under which the patients lived, the character of the work they had to perform, the amount of care bestowed on them, and the promptness or otherwise with which they were invalided after the invasion of the disease. I fancy my own experience in this respect is a reflex of that of others, and of it I will give you a few examples of the forces in operation to militate against recovery. In one instance where the fatality was moderately heavy most of the horses are daily engaged in negotiating vehicles which, when empty, weigh upwards of thirty hundredweight, and when filled frequently scale from three and a half to four tons; and to these loads there has to be added the fearful strain imposed on draught-horses by the hilly nature of our streets. In another instance the average daily load at a moderate computation exceeds fourteen tons, and this weight has to be conveyed for a distance of several miles.

In a large proportion of fatal cases the fatality was due to the fact that the animals were not thrown off work until they were literally unable to crawl, and in which, at a first glance, death was prognosticated, and in one case I was just in time to see the animal die. In two cases death was due to septic cellulitis of the limbs as a result of severe bruising arising inconsequence of persistent recubation, owing to absolute inability to stand. In another I discovered after the death of the horse that not one third of the medicine that had been supplied had been administered, whilst in another, and that one of the worst I had to contend with, death was most certainly due to the withdrawal of stimulants at the most critical stage of the malady. With the exception of these cases the few animals that died under my care succumbed to the effects of septic Pneumonia (or Pleuro-pneumonia) or septic Muco-enteritis. In one case death was due to acute Hydrocephalus.

When one reviews the nature of the cases with which he had to contend, the anxiety with which he watched day by day and hour by hour animals whose physical powers scarcely equalled those of a child, whose vital powers were at the lowest possible ebb, whose hearts scarcely seemed to have sufficient power to deal with the pulmonary circulation alone, and in whom the pulse seemed so feeble that it threatened every moment to cease beating; when, again, one watched animals whose lungs were extensively consolidated, whose breath was laden with putrefactive odours, and whose bowels were discharging for hours together unbearably fœtid fæces; the wonder in one's mind was, and is, not that so many animals died, but that so many resisted the lethal influences of the malady.

To show how variable were its fatality and its virulence, I will direct attention to two or three cases which came under my own notice. In one practice in the North of England no deaths occurred, nor was any anxiety felt as to results except in one large stud of horses in which every case that occurred was worse than the one that preceded it, and in which the fatality was about 35 per cent. In one instance I had two horses under my charge, both of whom died, while in another in which there were seventeen cases of the disease (and most of them of the worst type) and nine relapses, not only were there no deaths, but there was an entire absence of sequelæ.

*Clinical Characters.*—The clinical characters and course of the malady were tolerably uniform in every case, being modified, however, by the condition of the patient's system and by its surroundings. At the outset great lassitude and depression were observed, and these became intensified as the cases progressed. Not only were the vital powers depressed, but the voluntary muscles seemed to lose their contractile force, and the natural functions of organs became perverted and partially or wholly suppressed. Pyrexia was marked, the temperature ranging from 103° to 107°F., and varying materially at the opening and closing of day. Pain was manifested in the joints, the limbs, the feet,

and in the muscles of locomotion ; in some cases, indeed, it was so great as to cause the animal to groan whenever it was forced to move, and in nearly all it was shown by inability to stand quiet for one moment of time. The pulse frequently ran up as high as 90, 100, or 120 per minute, but the respiration was not materially disturbed at the outset nor during the course of the disease, *i.e.*, if arthritic and muscular pain was not greater unless lung complications ensued. The mucous membranes were intensely injected (capillary injection) and more or less tumefied, the tumefaction of the Schneiderian membrane giving rise in some cases to pronounced nasal stertor; of the pharynx to dysphagia; of the larynx to roaring; of the intestines to interference with peristalsis to such an extent as to cause retention of fæces and colic; of the uterus to abortion. But in none of the mucous surfaces was the tumefaction so observable as in the conjunctiva, this in some cases being so extreme as to impart to the superficial mucosa a gelatinous appearance, and by pressure induce ectrosis.

Tumefaction of the limbs was in some cases so extreme as to cause them to become absolutely misshapen and to effectually prevent locomotion. Joint capsules and bursæ became distended to their utmost capacity, especially in those cases where distension already existed, and the lymphatic vessels and veins engorged.

One of the most marked features of the malady was its effects on the corneal structures, and occasionally in the anterior chamber of the eye itself, though these effects were not so commonly produced in the recent outbreak as in some previous epizootics which have come under my notice; in a few cases they were very marked, and as in previous epizootics the corneal infiltration invariably commenced at the lower margin, extending round the circumference, and occasionally involving its whole surface, producing in conjunction with the lymph-exudate, in the anterior chamber, partial or total blindness.

*Complications.*—The most serious complications and results met with were :—

1. Laryngeal œdema.
2. Pulmonary congestion.
3. Broncho-pneumonia or Broncho-pleuro-pneumonia, with a great tendency to septic process.
4. Cardiac and pericardial complications with *ante-mortem* cardiac clotting.
5. Congestion of the liver and jaundice.
6. Prolonged constipation of the bowels or profuse diarrhœa, with, in some cases, septic Muco-enteritis.
7. Laminitis.
8. Abortion.
9. Septic cellulitis.

The complications above noted usually arose at from the second to the sixth or seventh day; and while they were in some cases of little consequence, in many they were of the gravest character. Thus the laryngeal œdema produced occasionally such serious dyspnœa as to necessitate persistent watching, and in one case I was compelled to perform tracheotomy.

*Pulmonary Congestion* took place in some instances so suddenly and violently as to attract immediate attention, while in other instances its invasion was insidious and slow; if not quickly relieved it almost certainly terminated in serious lung mischief, and frequently in death.

The *broncho-pneumonia* lesions, especially when the lungs had been previously damaged, frequently terminated in consolidation and multiple abscesses with putrid Pneumonia, a condition I need scarcely say of the most dangerous character, though not necessarily fatal, as in two of my cases recovery ensued. Pleurisy, when septic products were thrown out, was inevitably fatal.

*Cardiac derangement* was evidenced by marked irregularities in the heart's action, these in some instances amounting to positive intermittence, which occasionally persisted for a considerable period after convalescence had been established. Here, as in all acute fevers, granulo-adipose degeneration to a greater or less extent took place.

*Pericarditis*, like Pleurisy, was sometimes associated with the formation of septic products. *Ante-mortem* cardiac clotting did not occur so frequently in my practice as I have seen in similar epizootics.

*Hepatic congestion* was common, and doubtless resulted from the effects of the poison in the organ itself, though jaundice may have been due in some cases to tumefaction of the mucous membrane of the bile ducts.

*Constipation* extending over three days took place in two of my cases, and, owing to the danger of adopting the usual remedies to overcome it, gave rise to great anxiety, and demanded perpetual observation. Diarrhœa in moderate degree was rather beneficial than otherwise, so long as the discharges were normal in character, but once they became septic typhoid conditions were established, and the fight for mastery was a desperate one.

*Laminal Congestion* was a comparatively frequent complication, but in only three or four of my cases was Laminitis established, and in one of these subsolar suppuration and descent of the *os pedis* of both fore feet took place.

*Abortion* occurred in three of my cases; in one the foal had been dead for some time—in fact, from a period corresponding to the date of a severe injury which the animal had previously received; in the other two the foals and the membranes were normal, except that there was some effusion into the structures of the latter.

*Septic Cellulitis* occurred, as already intimated, in two of my cases. In one the animal bruised the tissues of the elbow of the near fore leg, by the heel of the shoe, in recubation, and the destructive process extended to the pectoral muscle, which became completely disorganised; in the other the animal was at the onset of the attack suffering from a bad form of Quittor, in consequence of which it persistently assumed the recumbent position, and the skin and the subcutaneous tissue of the substernal region with the pectoral muscles became severely bruised, resulting eventually in mortification and death.

*Relapses* were of frequent occurrence, especially in studs, where the exigencies of trade precluded a sufficiently prolonged rest, or where the animals were exposed to the effects of inclement weather, but I should point out here that alterations of temperature and barometrical conditions exercised a material influence on the progress of the malady generally, and I doubt not that most practitioners observe the fact that on particular days the cases seem to improve rapidly, while on others all appeared to be retrograding instead of progressing. In my experience, too, relapses were often more serious in cases in which the original attack had been mild than in those in which it had been severe. The *sequelæ*, in cases coming under my observation, of the greatest importance have been derangement of the heart and chronic disease of the lungs. I have not had a single case of Purpura hæmorrhagica, but only on Monday last a horse was brought in to me from the country suffering from obstinate diarrhœa.

*Therapeutics.*—In carrying out any particular system of therapy we must first assure ourselves that it is applicable to every case of a particular malady, the general characteristics of which are identical. Was such a rule in existence in the recent epizooty? I venture to say, and that most emphatically, that in no previous outbreak was routine treatment found to be wanting so much as in this, the most recent one. Granted that certain rules of treatment were applicable in individual cases, and in individual studs, the

experience of most practitioners was that in the case of the great bulk of animals attacked each individual animal was, from a therapeutic point of view, a study in itself; and not only so, but, speaking for myself, many preconceived notions as to the value of recognised agents were materially shaken. Thus, at the outset of the epizooty I placed considerable reliance on such anti-zymotics as quinine, salicine, salicylic acid, and salicylate of soda, but as time wore on I found that more benefit was to be obtained by the administration of anodynes and diffusible stimulants, and in continuing their administration until the pain, and consequently the fever, was subdued. One agent I found especially beneficial, viz., chloral hydrate, as it not only relieved the suffering, but exercised a material effect in reducing the temperature. In its administration, however, its depressing influence is required to be guarded against by combining it with ammonia and other stimulants. In the same way the administration of aconite was admissible under strict supervision, and guarded with stimulants in particular cases. Antifebrine and antipyrine found no place in my armament, for the simple reason that I have not seen in previous outbreaks that any material advantage over other remedies was obtained by their use. Some practitioners decry the use of laxatives in such maladies; but, as on former occasions, I found that where a combination of non-irritant laxatives, such as aloin and calomel, was administered at the outset, more favourable results followed than in those cases in which their use was withheld.

Giving all due allowance to the therapeutic value of medicine as medicine, there can be little question but that the best results were obtained in those cases in which the attendants were thoroughly up to their work, and in which they carried out faithfully the instructions of the veterinary surgeon, and intelligently interpreted the signs presented in the varying phases of the malady, and not only this, but were able to obtain unstintedly such adjuncts as nutrients, stimulants, clothing, and general comforts.

Much controversy has arisen in connection with the use of general stimulants (calefacients) and external irritants in the treatment of this malady, and one very objectionable feature of the controversy is that it has been carried on in the columns of lay publications. Dealing, in the first place, with the use of stimulants, I take it for granted that most of the members present are conversant with the fact that a veiled attack was made upon myself by the publication in one of the daily papers, in the form of a statement to the effect that, while one of my confrères cured his cases without the aid of stimulants, I killed them by the administration of whisky; and, so far, circumstantial proof of this was offered in the statement that while I had killed five horses in one stud by administering whisky, another practitioner had not had a single death in a large number of cases treated without its aid. Both of these statements were, to use the mildest language, simply untrue, and what is worse, the statement affecting the status of that other practitioner was never controverted, but allowed to pass as truthful representations. I shall, with your permission, Mr. President and gentlemen, review the position as it affects myself.

A definite statement was made (and that, too, without the author of it taking the slightest trouble to make himself acquainted with its accuracy or its falsity) that five horses owed their death to the administration of whisky at my hands. Now, what are the true facts of the case—first, that two of these animals never even smelt, much less tasted, whisky or any other general stimulant, and that in the treatment of the particular stud referred to the average cost per head for beer and whisky in dealing with sixty-four primary attacks and twenty-four relapses was as nearly as possible the large sum of fivepence-halfpenny. I am quite sure that the judicious administration of stimulants, *i.e.*, their use in proper quantities and at proper times, and above

all, at the ebb-tides which occurred in the progress of the malady, was the means of salvation in hundreds of cases that, wanting their invigorating effects, would have terminated in death or in hopeless disease of a chronic type.

In the limits of such a paper as this it is impossible to enter into an exhaustive discussion on such a question. I can only generalise by pointing out that where there is a fire fuel must be supplied; where there is arrest of nutrition it must be stimulated; where the vital powers are failing they must be roused to renewed energy; where the great nerve centres are depressed to a dangerous degree they must be electrified into renewed life; where the circulation is clogged and hindered it must be supplied with a stimulus; where secretion is arrested it must be restored, and where the appetite fails it must be resuscitated. In how many cases was it found that whisky lowered the temperature in a very short space of time, and when there was great danger of cardiac failure the judicious use of brandy averted it? And what was the universal testimony of intelligent attendants upon these cases? Simply that they found that the judicious administration of stimulants at the proper time put new life into their patients; that often when the animal appeared to be suffering from the extremes of exhaustion and could scarcely raise its head from the bed on which it was lying, a tolerably large dose of whisky, combined with beer or with milk and eggs, was the means of rousing it and causing it to "rise and eat." I do not advocate the indiscriminate use of stimulants in treatment of such maladies as the one under consideration; they are not absolutely required in mild cases and when the appetite is good, but even here they are beneficial; they are, pronouncedly, indicated in conjunction with nutrients when emaciation is proceeding apace, when the vital powers are at a low ebb, when the natural functions are suppressed, when the circulation is sluggish, and when hypostatic congestion of the lungs is threatened; and they are, in conjunction with vegetable and mineral tonics, of incalculable value in the convalescent stages of such maladies, their withdrawal in too sudden a manner at this time having much the same effect as the sudden arrest of the supply of electricity to an electric battery; there is indeed, under these circumstances, a probability of the vital energies stopping short never to go again. And if the remarks I have just made are applicable to the use of internal, they apply with equal force to the employment of external stimuli. I do not advocate the indiscriminate use of blisters as blisters in every stage of such maladies, but I do say that the judicious use of flying blisters is attended with the most beneficial results in the early stages, at the occurrence of crises, when the vital forces are in a state of suspended animation, and in dealing with sequelæ.

No man knowing anything of the action of powerful irritants would apply them, for instance, when a Pneumonia or a Pleurisy was at its height, but every person who is not too bigotted to see things in their right light must have observed their good effects in the congestive stages of these diseases and in the treatment of their results.

During the whole course of the recent epizooty I have only twice applied a vesicant, and that with the happiest effect, but I plead greatly to the free use of rubefacients in the shape of mustard, stimulating liniments, and hot fomentations, and I emphatically say that I do not repent having employed them, nor shall I withhold my hand if I am ever again placed in a similar position. In the general treatment of these cases I cannot too much emphasise the value (as adjuncts) of comfortable, roomy, well-ventilated loose boxes, bedded with short litter and kept at a moderate temperature; the necessity of slinging the animals (and especially heavy horses) whenever exhaustion is extreme; of taking off the shoes and applying hot poultices whenever lamineal conges-

tion is threatened; of administering warm and even stimulating enemas whenever the bowels are torpid and the animal is suffering from the effects of a rigor or a chill; of stimulating the extremities when the peripheral circulation is sluggish; of judiciously (not too heavily) clothing the surface of the body; of supplying the patient with an abundance of pure water and with nutrient and laxative food, and even of forcibly administering such when required; of relieving pain as quickly as possible; of stimulating the circulation in the stiffened limbs by hand-rubbing and the use of mild stimulants; of applying anodyne fomentations and anodyne liniments to the skin over painful joints or bursæ, and by watching jealously for every turn in the tide, and giving it an impetus in the right direction.

In cases of marked laryngeal œdema, I could especially point out the great benefit to be derived from performing the operation of tracheotomy before the blood has become devitalised from the effect of oxygen deprivation and the lungs have become engorged to their utmost capacity. The performance of the operation here means life, its non-performance means death.

In bringing this discursive paper to a close, I will briefly direct attention to the indifference and apathy with which such equine maladies as the one under consideration are viewed in a prophylactic sense, not that in my opinion preventive measures are of much avail in arresting the dissemination of such miasmatico-contagious diseases as this, but that it is our duty to leave no stone unturned in order to circumscribe the radius of its influence and to protect healthy animals from contamination with its deadly virus.

Mr. R. Reid, Auchtermuchty, also read a paper on

"The Recent Outbreak of Influenza."

Mr. Chairman and Gentlemen,—In addition to the very interesting paper on the recent outbreak of "Influenza," or what is more commonly known and even more dreaded, viz., Pink-Eye, in Edinburgh, by Professor Walley, I have been asked by our much respected Secretary to make a few remarks on the cases of Influenza which have occurred in our practice quite recently. I fear that I will be going over the very same ground as Professor Walley has already done in his paper, but I trust that, from the papers brought before your notice, a hearty and enjoyable discussion will be the result, and that it may assist in clearing up some of the mysteries as to the nature of this disease. During the time of my father's practice in Auchtermuchty—a little over thirty years—this is the first outbreak of Pink-Eye he has seen in the district. He has had during the former specified time several bad outbreaks of Influenza; and since I commenced practice in the same district we have had three serious outbreaks. It was, however, on the 7th January of this year that I was wired for to see two horses, belonging to a firm in Markinch, that were ailing, and on making an examination I diagnosed Influenza, or that form of it, Pink-Eye. From all the books I have perused on this subject the true cause of Influenza has not been determined, but it is generally believed to be due to some specific agent, and consequently, in my mind, the disease is both contagious and infectious. There are people, I believe, who are averse to this idea, as we find people who disbelieve as to the contagious nature of zymotic Pleuro-pneumonia. We all know what a difficulty there is in finding out how Pleuro-pneumonia is disseminated, and I have no hesitation in saying that if Influenza was as carefully investigated as to its spread as the former disease is now, we would find that it had come either directly or indirectly from a place where Influenza is or has been recently. All the cases that have come under my notice can be traced to the aforesaid cause. In the outbreak at Markinch some of the horses belonging to the firm were daily in Kirkcaldy, and at that time most of the horses in that place were exceedingly bad with Pink-Eye, and the fatality great. And I am informed

that the disease was first introduced, unknowingly of course, into the Kirkcaldy district by a dealer, who had bought some horses in Edinburgh, and it was in his stable that the disease first made its appearance. Again, the cause of the cases which we have in hand at present can be traced to a pony purchased in Perth, our client receiving an old mare for a few days from this party who had purchased the pony. The mare took ill, was sent home, and afterwards died; and then in the course of a few days three of our client's horses were noticed ailing, and it was then we were communicated with. From the time that the mare in question was introduced into this stable and the disease making its appearance was five days.

In all our cases of Influenza the symptoms varied considerably in each animal; so much so is this the case that one might be induced to describe them as distinct forms of the one disease, or as complications along with the "catarrhal form," which I will place first, as it is easily managed, and is always seen accompanying the other forms. Secondly, the "thoracic form," embracing Bronchitis, Pneumonia, Pleuro-pneumonia, and changes in the heart. Thirdly, the "rheumatic form." Fourthly, the "enteric." The symptoms of the catarrhal or non-complicated form; about the first thing observable is dulness, little or no desire for food, rigors may be noticeable, great disinclination to move, coat stareing, want of proper distribution of bodily heat. There is always fever present. Pulse may be 70 or even more. Temperature 104° to 106°. Breathing quickened, possibly a cough, and especially so is the case when the throat is affected. The Schneiderian mucous membrane is red and dry, and frequently there is a flow of tears. In the mildest cases the fever does not appear to abate until about a week or ten days; during that time there are a number of changes. You have a marked wasting of the patient, there is great prostration, and thirst is a marked and persistent symptom throughout, the fæces become dry and pasty, and occasionally covered with mucus, urine scanty and high-coloured, at first a thin watery discharge from the nose, which becomes in time profuse and of a cellular nature, the cough instead of being hard as at first becomes moist and not so painful. The limbs frequently swell to a great extent, especially in an animal that has been already the subject of Lymphangitis or has a tendency to Grease. There is always one thing to be feared even in those simple non-complicated cases, and its occurrence greatly hinders the recovery of the case, viz., a bad throat. This we had in many of our cases in the months of January and February; swellings in the submaxillary and parotid glands which ended in suppuration, and consequently leaving our patients very much emaciated. Should no such sore throat occur, the appetite returns, pulse becomes slower and fuller, temperature gradually falls, not the same disinclination to move, the swellings about the legs disappear, and in about sixteen days the horse is convalescent. I am inclined to think, from my observations in the former outbreaks of Influenza in our neighbourhood, that there must be a particular germ or poison which produces the phenomena seen in Pink-Eye, because in the previous cases of Influenza which have come under my notice no such appearances were visible in the eye and its appendages as were detected in this last outbreak. The symptoms which I have enumerated in the simple form of Influenza are here present as they are with the others. Only I would say they were more marked in this form than in catarrhal Influenza. The prostration is greater, the conjunctiva assumes a pink or red colour, and in bad cases I have seen it almost black. The membrane and the subadjacent tissues become infiltrated with fluid, appearing between the eyelids as a red sack. There is profuse lachrymation, which to start with is watery, but as time goes on becomes thick and glutinous; there is swelling of the eyelids, and for some days the horse is totally blind from the amount of œdema of the conjunctiva and eyelids. And after the cornea can be examined you can

detect opacity of it, which sometimes takes a considerable time to clear up. The pulse in some of those cases I have found numbering 90 and 100, and the temperature 107 degs.

In the second form where the chest symptoms predominate the animal shows all the appearances as related in the catarrhal form, only those are much more aggravated. There is marked thirst, the pulse is even quicker, and when there are any cardiac lesions is frequently irregular, the temperature as high as 106° to 107°. The horse has a very anxious expression. The head constantly moved from side to side, heaving at the flanks, with threatened dyspnœa in some cases, the nostrils widely dilated, the mucous membrane of the nose as time advances has a dull, leaden appearance; there is a discharge from it which is frequently tinged with blood; there is great pain evinced on the animal attempting to cough or even move. On having recourse to auscultation it reveals the true state of matters in the chest. Over the trachea and large bronchi there is a harshness heard in breathing, whereas over the region of the small bronchi you can detect sibilant or wheezing sounds, and those are in time, should resolution not take place, succeeded by mucous râles, and not unfrequently you can detect the friction sounds of Pleurisy. In Influenza where you have thoracic complications to encounter is, in my opinion, where you have the death-rate highest.

Thirdly, the "rheumatic form" is, to my mind, more an associate with the other forms than a distinct variety, because there is always more or less stiffness, disinclination to move, etc., not to the same extent of course in some cases as in others. On manipulating the lumbar muscles, the fibrous structures of the joints, the tendons and bursæ of the flexor pedis perforans and perforatus seem to cause a great deal of pain, the animals having sometimes great difficulty in placing themselves in position to perform the acts of defæcation and micturition, and by their doing so emit a groan. I have noticed in the advent of the legs beginning to swell, due to infiltration in the subcutaneous tissue, that the pain was very much mitigated, although the stiffness remains.

Fourthly, the "enteric form." I have never seen this form at the commencement of an attack, but frequently the animal has shown evidence of it in the course of five or six days from its taking ill, by having colicy pains, its uneasiness, attempting to lie down, looking back towards its flanks, pattering of the hind feet, pulse quickened, temperature elevated, passing small quantities of fæces, and if the mucous membrane of the rectum be examined it has frequently a very dirty yellowish red colour; especially so is this the case when the patient shows signs of jaundice. When the liver is involved, which is frequently so, all the visible mucous membranes have a yellow colour, the fæces become pale and of a bad odour, the urine becomes very high coloured, and in bad cases there is stupor, due to the hepatic condition of the blood.

*Treatment.*—There can be no fast line of treatment laid down in Influenza as is generally done in other diseases, but one must treat according to the symptoms as they arise. There are a few things, however, that are always advisable to be seen to, viz., cleanliness, good ventilation, the careful use of disinfectants, have the patients rugged up and bandages applied, and if such are at hand the use of loose boxes. The medicines which we found most beneficial when we had high fever and pain was the free use of febrifuges and anodynes, and when on getting the fever reduced, and where there was much exhaustion, stimulants were given, followed with vegetable tonics. In throat and chest complications we had recourse to mustard, and afterwards woollen cloths wrung out of warm water applied if the mustard had not the desired effect. This was also done when the muscles of the loins were affected.

In all the cases I had in stalls there was always a rope put round behind them for the purpose of support, and any case that was very much debilitated was put in slings. We drenched the horses as little as possible in case of any medicine gaining access to the lungs, but gave the medicines either in their drinking-water or in warm mashes which was their only food. In those cases where the animals were unable to take the mashes they received nourishment per rectum.

I shall but mention a few of the sequelæ of Influenza which I have experienced. There are a few of our patients which have become roarers. This may, of course, be only temporary, due to thickening of the mucous membrane, some alteration in connection with the vocal chords or muscles of the larynx, lameness first in the one fore fetlock-joint and then in the course of a fortnight in the other, and we have in two or three instances deafness. Whether the latter is like the roaring of a temporary nature time, of course, will tell, and in one animal abortion.

A short discussion followed.

On the motion of Mr. BARCLAY, seconded by Professor MCFADYEAN, votes of thanks were accorded to Professor Walley and Mr. Reid for their very interesting papers. W. D. FAIRBAIRN, *Hon. Sec.*

## MONTREAL VETERINARY ASSOCIATION.

ON March 31st the Convocation of the Faculty of Comparative Medicine and Veterinary Science of McGill University was held in the William Molson Hall.

Promptly at three o'clock Mr. J. W. Brakenbridge, B.C.L., registrar of the University, entered at the head of a procession, including the Chancellor (Sir Donald A. Smith), the Vice-Chancellor (Sir William Dawson), Dr. D. McEachran, Dean of the Faculty of Comparative Medicine and Veterinary Science; the Professors of the Faculty, and the members of the Convocation and the graduating class.

The Chancellor having taken his seat, the proceedings were opened. Among those who occupied seats on the platform were Dr. Stewart, of the Medical Faculty, Mr. J. J. Curran, Q.C., M.P., and Mr. John W. Gadsden, M.R.C.V.S., of Philadelphia.

The CHANCELLOR called upon Professor McEachran, Dean of the Faculty, who delivered a very short but pithy address. In the course of his remarks he pointed out that the accumulation of wealth marked the progress of a nation, and that McGill was rapidly becoming famous abroad, as he had observed during his travels. To what more useful purpose could our m erchant princes put their money than to endow a seat of learning? McGill had much to be thankful for in this respect, but the Faculty of Comparative Medicine had been left to struggle alone. He then went on to show the importance of the profession, which devoted its energies to the alleviating of suffering among the dumb creation who were unable to care for themselves, and the importance of the prevention of diseases among animals to the human race, since we derive the greater part of our food from that source.

He then read the list of prize winners, who were called up and presented with their prizes by Sir William Dawson, assisted by Professor Charles McEachran.

Dr. MCCRANK was then called upon, and delivered the valedictory address, which was interesting and eloquent, covering the whole field of the veterinarian action and taking a very high view of the scope of his duties. He then, addressing the Professors, paid a high compliment to their abilities, and his address to his fellow-graduates contained some excellent advice for their future guidance.

Sir DONALD SMITH then referred in terms of high praise to Mr. Gadsden for his munificent present to the Faculty, and called on that gentleman to speak.

Mr. GADSDEN said : I have had excellent opportunities for six years past of knowing the nature of the work being done by the Montreal Veterinary College, having for that time occupied the position of one of the examiners in the practice of medicine and surgery. I may say that I have watched its progress with interest, and year by year noted the improvement in the proficiency of the young men coming before us. Besides, I am thoroughly aware of the high reputation of the school, and the gentlemen who form its staff of Professors and associate-Professors. And I know how much the Dean of the Faculty has had to do in preventing contagious diseases in your live stock, in the advantage of Canada over the United States of from ten dols. to fifteen dols. a head for every animal exported to Great Britain. I wish here to say that I have noticed with considerable surprise the fact stated by the Dean, that this Faculty, second in importance both commercially and scientifically to no other Faculty in the University, should receive no aid to enable it to carry on its good work. Surely in this great commercial metropolis there are gentlemen who can appreciate the great work this Faculty is engaged in sufficiently to induce them to contribute to its endowment. As an inducement for others to do something towards helping on the progress of comparative medicine, I beg to say that I have spent thirty-three years of my life in the active practice of the profession, during which time I have accumulated a library and private museum of considerable value. The library contains among other works "The Veterinarian" for fifty years, a most important period in the history of our profession, and especially on the subject of contagious diseases of domesticated animals in Great Britain, and the legislation bearing on this important subject. As I am now about retiring from practice, I have much pleasure in presenting both to this Faculty, the only condition I ask being that they be kept intact, and form a part of the library and museum of this Faculty. In conclusion I beg to express a hope that before long this Faculty will have among the benefactors of the University friends enough to put it on a footing, if not equal to the older Faculties, at least such as will enable it to keep pace with them on the onward march of improvement. I may say that the class who have graduated this session are equal, if not superior, to any class I have previously examined, and I have no hesitation in saying that they will uphold in every way the reputation of Canada's great seat of learning.

Dr. M. C. BAKER delivered a valuable farewell address to the students, giving a retrospect of their past study, and a very appreciative account of the work before them. His address contained some excellent advice. Among other things he counselled them to remember that they could not live for themselves alone, and to make total abstinence their motto.

The CHANCELLOR said he had great pleasure in introducing his friend, the member for Montreal Centre. It was needless to do so, he was so widely known, but they would all be happy to hear Doctor Curran, to give him his University title.

Mr. CURRAN, who was loudly applauded, said that he felt it was rather an odd way to open his short address before so august and learned a body and so intelligent an audience, but he could not help saying that he imagined he had caught a merry twinkle in the eye of the Chancellor, Sir Donald Smith, when he was introducing him a moment before. That twinkle seemed to say "I have cornered you." It is all very well to speak on ordinary occasions, but this was no ordinary occasion. It was one when a prepared address was *de rigueur*, and he had to confess that with his many occupations he had not been able to devote the time necessary to tell them in appropriate lan-

guage when he knew about the veterinary art. They did not expect that he would; no doubt they hoped he would not, and therein lay his safety. He had read some time ago of a man who pestered everybody about him by persistently talking about German and Germany, until at length some one asked him if he could speak German himself. He replied that he could not, but that he had a friend who was a prodigious performer on the German flute. Well, he was not quite so far out as that man; he, at least remembered the time, and that not so long ago, when there was no Veterinary College in Montreal, when the only depositories of the art curative for dumb animals were the Swinburns, the Masons, his own grandfather and his father, and one or two others, men who had brought from the Old Country a knowledge of splints, Spavins and Ringbones, and some recipes for the less complicated diseases. Mysteries that had been handed down from father to son, that were carefully guarded, and of which, perhaps not without some reason, they were justly proud, for those men did good work in their day. When it was stated that not until 1866 had a Veterinary College been established in this city, it was not so much to our discredit. True, in England, from away back the art had been taught, but its practitioners were mostly confined to the regular army, and to the present day the farrier did nearly all that was done outside of the ranks of the military service. This Faculty, now associated with the name and under the fostering care of McGill University, had a very humble beginning, but such had been the inception of nearly every great and successful enterprise. Sir William Dawson and the late Dr. Campbell, Dean of the Medical Faculty, had given their powerful patronage to that indefatigable worker for Canadian interest, their present Dean, Dr. McEachran. In 1875 the present buildings, now altogether inadequate, had been erected by their Dean at his own expense, and it was not too much to say that his name would ever be connected with the rise and progress of this Faculty of McGill College as its founder and fostering parent. The results of the labours of the Dean and his associates were before the people of Canada. In 1876 when disease broke out in Great Britain amongst the live stock, it was due to their representations that the order-in-council of that year was passed by the Dominion Government, limiting importation of cattle into our country to the ports of Halifax, St. John, N. B., and Quebec, and establishing a quarantine that had saved one of our greatest sources of wealth from destruction. That action on the part ot the Government, indicative of so much solicitude and guaranteeing the health of our live stock, brought Canada prominently before the world, and from a small beginning of a few thousands of cattle exported annually, the trade had now reached millions of dollars, and from the port of Montreal alone last year 123,000 head of cattle was shipped to the mother country. If our cattle are not scheduled to-day it is due to the men formed in this school who have been able to carry out the Government regulations with scientific precision. Thus they might truly say that their Convocation has a significance far beyond the walls of their famed University; it has a significance at least as wide as our Dominion, for in sending out these young gentlemen well equipped and thoroughly trained, they were furnishing a trained guard to protect some of the best interests of our country, who would at the same time devote themselves to the practice of a profession for the relief of the poor suffering dumb animals, which appealed to our sympathies in a very high degree. The admirable address of Professor Baker had covered much of the ground he had intended to treat, but the valedictory of Dr. McCrank on behalf of the graduating class was so replete with noble and generous sentiment and breathed so fully the aspirations that ought to be the aim of true-hearted and enlightened men starting upon the journey of life in an arduous profession, that it would be unnecessary for him to add one syllable to what had already been so well ex-

pressed. He would simply say, as one of the representatives of the city of Montreal, and a very humble graduate of one of the Faculties of the McGill University, that he joined his thanks with the far more important thanks of the Chancellor and his associates to Doctor Gadsden, of Philadelphia, for the generous gift of his library and museum, and his handsome money donation to this Faculty of McGill College. The Doctor had been living for years under the Stars and Stripes, and had done great service to that country by his learning, his zeal, and his activity as a worker, but

L'on revient toujours
A les premiers amours,

and he had not forgotten this College on Canadian soil when he felt the time had come to do the crowning act of generosity of his life. The Faculty needed assistance. Let him say to others, who were able, "go and do likewise," for in promoting the welfare of the Veterinary College they were making an investment that would repay their country a hundredfold. Mr. Curran resumed his seat amidst loud plaudits.

The proceedings ended in the usual manner.

## ONTARIO VETERINARY COLLEGE.

### *Spring Examinations.*

THE Board of Examiners, consisting of Messrs. W. Cowan, V.S., Galt; C. Elliott, V.S., St. Catherine's; A. O. F. Coleman, V.S., Ottawa; J. D. O'Neil, V.S., London; W. Shaw, V.S., Dayton; J. H. Wilson, V.S., London; T. H. Loyd, V.S., Newmarket; C. H. Sweetapple, V.S., Toronto; and J. Thorburn, M.D., Toronto, met on the 23rd of March in the Examination Hall of the College. During the 23rd, 24th, 25th, and 26th the examinations were in progress, about 160 gentlemen presenting themselves for the searching ordeal. On Friday the examination (oral) for the grand gold medal, given by the Ontario Veterinary Medical Association to the student passing the best general examination, was held. On this occasion, the regular examining board were assisted by Drs. Duncan, Cavan, and Peters, of Toronto.

On Saturday the closing exercises took place. Students, graduates, and friends of the College assembled in numbers sufficient to fill the lecture hall of the College. Professor Smith, Principal of the College, occupied the chair, and surrounding him were the Hon. J. B. Robinson, Ex-Governor of Ontario, Hon. Edward Blake, Sheriff Mowat, Hon. A. S. Hardy, Dr. Clark, Dr. Thorburn, Dr. Duncan, Dr. Ferguson (Welland), Mayor Clarke, A. O. F. Coleman, V.S., A. M. Campbell, V.S., C. H. Sweetapple, V.S., Col. Olter, Col. F. C. Denison, M.P., Joseph Tait, M.P.P., and many others.

After a short opening speech of welcome by Principal Smith, in which he referred to the admirable class of students—now graduates—who had attended during the past session, to the bright prospects for all ardent workers in this field of science, and to the great success of the College during the past year—the list of graduates was read by Dr. Duncan.

The presentation of medals and prizes was then proceeded with, the presentations giving the opportunity for many brief but brilliant speeches by the assembled friends of the College.

Hon. Mr. BLAKE, Chancellor of the University of Toronto, in the course of his remarks complimented Professor Smith upon the remarkable success that had attended his efforts in the development of the College. He said that the hope of the agriculturist depends more and more upon his being able to produce the result of his labour in the most finished condition. Anything which would tend to improve the breed and prolong the life and efficiency of the animals in his charge, would help to bring about this result.

He learned that the greater part of the students attending the College were from the neighbouring Republic, and no more gratifying testimonial to the efficiency of the institution could be had.

The Hon. Mr. HARDY, in representing the Minister of Agriculture, spoke briefly, complimenting the management of the College on the practical nature of its curriculum.

The Hon. J. B. ROBINSON, in the course of a humorous and admirable speech, highly complimented Principal Smith on the success of the College. He hoped to be able to attend many more such pleasant gatherings as the present.

In presenting the prizes for the dissected specimens on exhibition, reference was made to the high standard of excellence these specimens showed. This remark elicited loud applause.

The specimens included a heart and large vessels in position between the dorsal vertebræ and sternum; ligamentous preparations, etc., showing almost every joint in the body, and dissected limbs, etc.

Speeches were also made by Col. Denison, M.P., J. Tait, M.P.P., Dr. D. Clark, Dr. Ferguson, Rev. G. M. Milligan, Rev. C. Campbell, Ald. Saunders, Ex-Ald. Frankland, and others.

The presentation of prizes having been concluded, Mr. A. C. Kellor, chairman of the graduating class, in an eloquent speech, presented to Professor Smith a large and exceedingly handsome picture of the graduating class of 1891.

Professor Smith, in reply, thanked the students most heartily for this token of their appreciation of the College, and spoke with feelings of regret at parting with a class that certainly had not been excelled in any previous year.

## ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council meeting held on May 6th, the following report was read:—

"*Pleuro-pneumonia.*—During the four weeks ending April 25th, there were thirteen fresh outbreaks of this disease in Great Britain reported to the Board of Agriculture, five of which were in England, in the counties of Chester, Lancaster, and York (W. R.), and eight in Scotland, seven of which were in Midlothian and one in Lanarkshire. In dealing with these outbreaks the Board of Agriculture slaughtered eighty-five diseased cattle, and 557 which had been exposed to the risk of infection. In addition to this the Board authorised the slaughter of fifteen other cattle which were suspected of being affected with Pleuro-pneumonia, but were found free from that disease on post-mortem examination. In Ireland fourteen fresh outbreaks of Pleuro-pneumonia occurred in the four weeks, twenty diseased cattle were killed, and one died, while 399 healthy contact-cattle were slaughtered.

"*Anthrax.*—There were eighteen fresh outbreaks of Anthrax reported in Great Britain in the four weeks, in the counties of Devon, Dorset, Leicester, Lincoln (Lindsey), Middlesex, Notts, Somerset, and Suffolk in England, and in Aberdeen, Forfar, Kirkcudbright, Linlithgow, and Perth in Scotland; thirty-one animals were attacked, twenty-five of which died, and four remained alive when the last published return was made up.

"*Swine-fever.*—In Great Britain 568 fresh outbreaks of this disease were reported; 3,066 pigs were attacked, 1,323 diseased swine were killed, 1,265 died, 211 recovered, and 578 remained alive on April 25th.

"*Rabies.*—There were four cases of this disease in the month in the counties of Essex, London, Surrey, and York (W. R.)."

Correspondence as to an epizootic outbreak in Yorkshire amongst lambs and as to scab in sheep had been laid upon the table. A discussion had

arisen on the subject of Abortion in cows, and it was agreed to recommend that a communication should be addressed from the Society to the Royal Veterinary College, asking whether in the opinion of the College the time had not now arrived for a further investigation into the nature of this disease, and if so, whether the College were prepared to recommend what action should be taken. Mr. Stanyforth had been added to the Committee.

Mr. DENT said there was a very strong feeling in the agricultural world that this matter of Abortion in cattle was almost as serious as anything which affected the herds of this country. (Hear, hear.) In spite of all the inquiries that had been made no satisfactory information had been obtained as to the nature of it or as to the means of prevention. The Veterinary Committee were unanimously of opinion that the Society should consult the Royal Veterinary College as to whether any means could be adopted against it.

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## Jurisprudence.

### IMPORTANT HORSE CAUSE.

COURT OF QUEEN'S BENCH.

(Before Mr. JUSTICE DENMAN and a Special Jury.)

GORDON *v.* SHEATHER.

THIS was an action lasting three days, commencing on April 30th, to recover damages for injury sustained owing to the alleged negligence of the defendant as a veterinary surgeon. In May, 1890, the plaintiff heard that Mr. Sheward, a horse dealer, had a mare for sale, and asked a friend, Mr. Frisby, to go and look at the mare for him. The plaintiff agreed to purchase the mare for £450, subject to a veterinary surgeon's examination; he also told Mr. Frisby that he wished the examination to be by the defendant. On May 9th, in answer to a verbal communication from Mr. Sheward to the defendant's wife, the defendant went to examine the mare, and gave the following certificate:—"I certify attending this day at Mr. Sheward's, Park-street, and examining for Henry Frisby, Esq., a bay mare (star snip, four white pasterns, highest off hind, and saddle-mark). In my opinion, she is about eight years old, and sound." Mr. Sheward paid him one guinea for the examination. On the same day a cheque for £1 1s. was sent by Mr. Frisby to defendant, the letter containing the cheque saying, "For examining a horse for me," and the defendant returned Mr. Sheward one guinea. The plaintiff gave Mr. Frisby a cheque for £451 1s., which was the price of the mare. Mr. Frisby paid for the mare, and on May 10th she was sent to plaintiff's stables. On the same day a groom put her in a trap and drove her out. The mare appeared to go short, as if not sound. A veterinary surgeon, Mr. Hunting, examined her on May 29th, and certified she was unsound, being lame on the near fore-foot. The matter was put into the hands of the plaintiff's solicitor, and letters passed between the parties. The defendant then set up that he was acting for Mr. Sheward, and was asked to make an examination of the mare, as she was going to be sent abroad, and that he had not examined her as between vendor and purchaser, Mr. Sheward representing to him that he and Mr. Frisby were interested in selling the mare to a foreigner in Paris. The plaintiff's reply was that such was inconsistent with his certificate, which stated that the mare was sound, and therefore the certificate was improperly given, and the defendant was responsible.

Mr. Lockwood, having opened the plaintiff's case, called

Mr. Panmure Gordon, the plaintiff, who said he instructed Mr. Frisby to

examine the mare and see if she was suitable for a cabriolet, to have her examined by Mr. Sheather, the defendant, and, if sound, purchase her. He saw the certificate of defendant, and sent a cheque for £451 1s., made payable to Mr. Frisby. The mare had belonged to Mr. Spencer Brunton, who wanted 400 guineas for her. He had known the mare by repute as having very fine action. In cross-examination, he said he had sworn, in answer to interrogatories, that he had told Mr. Frisby to tell Mr. Sheward and the defendant that the mare was for him.

Henry Frisby, a stockbroker, examined, said the plaintiff asked him to go and see the mare. When the plaintiff had agreed to give £450 for the mare, he said he wished her to be examined by the defendant. He never saw the defendant. He communicated with Mr. Sheward. Next morning Mr. Sheward handed him the defendant's certificate. When he saw the horse tried he told the plaintiff that it was not a good goer, and he would not give the money for her. Cross-examined, he said Mr. Gordon had instructed him to say that the mare was not for him, but for Mr. Jefferson. He was a good judge of horses, and was a judge at horse-shows. Noticed the mare was not a good goer; could recognise a lame horse if he saw one; thought this one went short and was a bad goer; he purchased her for his friend, the plaintiff.

A groom in the employ of the plaintiff, examined, said, in his opinion, the mare had never gone sound.

William Hunting, examined, said he was a Fellow of the College of Veterinary Surgeons, and had practised for twenty-six years. On May 29th he examined the mare. Her feet were misshapen, hollow in the middle, and blockey. He gave a certificate that her feet were affected, which he considered would end in Navicular. Navicular in its earlier stages was not constant, but intermittent. The objective symptoms were lameness when a horse first went out, and after warming to his work the lameness going off. It was a disease of the navicular bone. It might go on for weeks or months in its initiative stage. On January 26th, 1891, he examined her again, and found her still lame. She was much better. Cross-examined: Navicular could only be made certain of by *post-mortem* examination. It was ulceration of the bone. There were cases which puzzled veterinary surgeons very much. But for the lameness on May 29th he would have passed her sound. He did say to the defendant, "I cannot tell what disease she has, as she has not varied one bit for nine months." From after-knowledge he should think that she had not Navicular disease when the certificate was given. Did not remember telling the defendant that, after all, he thought it must be the mare's natural action; he would not swear he had not said so.

George Williams, F.R.C.V.S., said he examined the mare on June 2nd, and found her slightly lame. The frog was sprained, which might have been caused by the pressure of the pads. He would not have passed her sound. He did not think the mare ever had Navicular. He thought she was lame from Laminitis. The pressure from the pads might have caused it. The mare had badly-shaped feet. If he saw a horse with feet such as this mare had it would cause him to make a more careful examination. A letter accompanied his certificate, attributing the lameness to the frog-pads.

Professor James M'Queen, F.R.C.V.S., said he examined the mare on May 31st. She was unsound.

Professor Pritchard, examined, said he was teacher at the Veterinary College for twenty years. On June 6th he examined the mare. She was lame in both fore-feet, which lameness was caused by disease. She was suffering from Navicular. She had been lame for two months at least. She was unsound. He saw her again in January, and she was still lame. Cross-examined: He had known hundreds of horses that had been lame with

Navicular without altogether breaking down. Might have examined the mare before and passed her sound; did not recollect it; would not swear that he had not given her a certificate of soundness in April, 1890, shortly before defendant had examined her. With his first subpœna he received one guinea, with his second ten guineas.

Mr. George Sheward, examined, said he was a dealer in horses. The defendant thoroughly examined the horse. He never told the defendant that he was to merely make a cursory examination of her to certify that she was free from blemish. He first bought the mare for £200, when she was unbroken. She was one of the best goers he had ever seen step. He sold her to Mr. Brunton for £420. Mr. Mavor examined her on that sale and certified her sound. He bought her back for £350 six weeks before he sold her to plaintiff. He drove her every day before the defendant examined her. She was one of the soundest animals that he ever possessed. He would give a large price for her now.

This was the close of the plaintiff's case.

Mr. Jelf, Q.C., for the defendant, submitted that there was no case. The bargain was between Mr. Sheward and the defendant, without reference to Mr. Frisby. There was no evidence of negligence. The first examination after the sale was on May 29th. The unsoundness might have arisen after May 9th.

His Lordship said he thought it safer to leave the case to go to the jury.

Mr. Jelf then called Charles Sheather, the defendant, who said he was F.R.C.V.S. He had been qualified fourteen years, and had practised in London at York-terrace, Regent's Park. He saw the mare in the stall, then had her led out to the doorway; examined her eyes and looked her over. He had her run up and down, slowly at first, then fast. A man was put up, and she was galloped up and down ten or twelve times. He did not take the shoes off. There was nothing to indicate the slightest unsoundness. He was tendered a guinea, and Mr. Sheward said he would come up later for the certificate. Mr. Sheward said, "You must put Mr. Frisby's name in it." He knew nothing about the sale that was to take place. He saw no trace of Navicular disease, incipient or pronounced, nor capped hocks. Her feet were in accordance with her age and breeding. He was suffering from family affliction when his solicitor wrote the letter about a cursory examination. The letter was not true; it had emanated from his solicitor's office, and he had had contentions there about it.

Mr. Mavor, examined, said he was a practising veterinary surgeon. He examined the mare in June, 1889, and certified her sound. He examined her again in May, 1890, in plaintiff's stables, and certified her sound.

Joseph Mavor, a veterinary surgeon, said he had been in practice forty-one years. He examined the mare on July 7th last, and certified her sound. He made a very thorough examination, which lasted three-quarters of an hour. Cross-examined: Navicular is very progressive. It is not intermittent. The animal is permanently lame. It is not difficult to distinguish Laminitis from Navicular. One of the first symptoms of Navicular is constant resting of the foot; a contraction of the hoof follows. The mare's feet were not contracted, and she did not rest them; they were wide, well-formed feet.

George Fleming, C.B., LL.D., F.R.C.V.S., examined, said he was recently Principal Veterinary Surgeon in the Army. In July he examined the mare and certified her sound. A horse with Navicular disease becomes lame, and remains so. From Laminitis the horse might recover. From what he saw on July 7th, it was most improbable that Laminitis existed on May 9th. It was impossible that Navicular disease existed then.

Adrian Jones, veterinary surgeon to the 2nd Life Guards, examined, said he had examined the mare, and found her sound, but there was a trace of

Seedy Toe, which was disease of the horn from Laminitis. As a rule it did not cause lameness. The mare was not lame. Both fore-legs had slight splints.

Edward Coleman, examined, said that on August 29th he examined the mare at Rickmansworth, and found her sound. Cross-examined: Her shoes were not taken off. She had capped hocks, which any man of experience could have seen at once.

James Overed, examined, said he was a veterinary surgeon at Finchley. He examined the mare, and detected no unsoundness in her. Cross-examined: He did not mention capped hocks, because they did not constitute unsoundness. If he found splints he would not mention them in the case of an aged horse. There were splints.

Herbert Rymill, examined, said he was the proprietor of the Barbican Horse Repository. About 20,000 horses passed through his hands every year. He saw the mare run up and down in July, 1890. The mare went perfect; the best action he ever saw. Her shoes were taken off. Her feet had been very much neglected. She had been badly shod. He detected no unsoundness. He would have given £300 for her then. He would give £200 for her now.

This closed the defendant's evidence.

Counsel having addressed the jury,

The learned Judge summed up, and left the following questions to the jury:—(1) Did the plaintiff through Frisby employ the defendant to certify to the soundness of the mare? (2) was the certificate given for the purpose of being shown to a person proposing to purchase the mare? (3) was the defendant guilty of negligence in giving the certificate?

The jury, after an absence of two hours and a half, being unable to agree, were discharged without giving a verdict.

To the question whether the parties were willing to accept the verdict of the majority, the defendant was willing but the plaintiff was not. It was understood afterwards that the division of the jury was eleven to one—eleven being in favour of the defendant.

Mr. Lockwood, Q.C., Mr. Lewis Coward, and Mr. Daldy were for the plaintiff; Mr. Jelf, Q.C., and Mr. Bullen for the defendant.

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## CORK (E.R.) QUARTER SESSIONS.

James W. H. Ashe, V.S., plaintiff: Surgeon-General Thomas Tarrant, defendant. This was an action for £1 4s. 6d., being one guinea as fee on account of the examination of a horse, and 3s. 6d. for the keep of a horse.

Mr. T. H. G. Wallis, solicitor, appeared for the plaintiff, and Mr. Morrogh for the defendant.

Dr. Ashe deposed that he got the animal, which was a grey pony, from Dr. Cremin, of Cork, to sell by auction. At the sale 19½ guineas were offered, but at this sum Dr. Cremin refused to part with the animal, whereupon the defendant purchased the horse for 20 guineas. Witness, at defendant's request, examined the horse, and passed him as sound. The horse was kept in witness's establishment on the night of the sale at defendant's request To Mr. Morrogh: The horse had not a curb when it was sold, nor has it one now. Witness afterwards wrote a letter to the defendant stating that Mr. Phelan, V.S., had told him that Mr. Tarrant had informed him the horse had a curb. Witness stated in the letter that he might possibly have overlooked the curb in the hurried examination he had made. He promised to go down and examine the horse, and if it was the case that the horse had a curb Dr. Cremin would take him back. The day after writing the letter he went to examine the pony, and took it back. The horse was then sound and had no

curb. It was Dr. Cremin's wish that the horse should be taken back, and it was sold for the same sum to another gentleman. There was an enlargement of the hock, which might have been caused by a blow of some kind.

When the horse was sold the second time, was a certificate given with him? Mr. Peard, V.S., told me he examined the horse and passed him as sound.

Surgeon-General Tarrant deposed that he agreed to take the horse on the understanding that he was sound. Dr. Ashe said the horse was sound and all right. Witness afterwards saw that the horse had a curb near the hock. The horse was aged about nine years. To Mr. Wallis: A curb is an enlargement of the bone and sinew at the back of the hock. A bony enlargement and a curb may be totally different things.

The Recorder said that a veterinary surgeon was only bound to examine a horse to the best of his skill and knowledge, and even if he made a mistake he was entitled to his fee. No one was infallible—certainly not lawyers—and if a lawyer who gave a wrong opinion was obliged to return his fee, he (the Recorder) did not believe that the members of the Bar would be as prosperous as they are at present. (Laughter.) He would give a decree for the amount claimed.

## Army Veterinary Department.

*Gazette*, April 24th.

4th West Riding of Yorkshire (Western Division), Royal Artillery Volunteers:—J. F. B. Moody, gent., to be Veterinary Surgeon.

*Gazette*, April 28th.

9th Lancashire Volunteer Artillery, James O. Platt, gent., to be Veterinary Surgeon.

Dr. Fleming, C.B., has been elected a member of the Council of the Royal United Service Institute, Whitehall, London.

## Obituary.

Many members of the profession with hear with regret, of the death of Mr. Page Wallis, M.R.C.V.S., Cambridge, who died on May 6th, aged 64 years. Mr Wallis graduated in 1848, and settled in practice in Cambridge, where he was greatly esteemed.

We are informed of the death of Mr. Brett, M.R.C.V.S., of Nottingham, from Influenza. He graduated in 1882, and after practising for some years at Mansfield, he removed to the town in which he died, and in which he was much respected.

## Notes and News.

Anthrax in Australia.—From Sydney, New South Wales, we learn that the Government Veterinary Department there have recently been carrying on, at Rodd Island, some interesting experiments in regard to Anthrax, and these show that sheep and goats take the disease very easily, either by inoculation or ingestion, but, on the other hand, rabbits only take it by inoculation, whilst cattle are subject to it by ingestion, but rarely succumb, kangaroos, however, dying from it almost immediately when inoculated.

What Horses Die of.—A New York horse life insurance company, insuring only sound and generally young animals, worth between 100 dols. and 400 dols. each, reports that, of 704 horses dying within the past five years, 183 died of colic, 77 of inflammation of the bowels, 74 of kidney trouble, 51 of pneumonia, 52 of sunstroke, 30 of pinkeye, 37 of lockjaw, 23

of broken legs, 12 of epizootic, 10 of heart disease, 4 of blind staggers, 9 killed by runaways, 4 were drowned, 2 were killed by lightning, 128 died of unknown diseases, and only 8 were burned.

THE RELATION OF BACTERIA TO ANTISEPTIC SURGERY.—In his address in surgery delivered before the Medical Society of the State of Pennsylvania, Professor Roberts (*Times and Register*, Philadelphia, vol. ii. p. 3) gives a summary of current beliefs as to the part played by bacteria in surgical diseases. He assumes as a well-known fact that inflammatory fever, symtomatic fever, traumatic fever, and hectic fever are all due to the invasion of wounds by microscopic plants, and that they also cause suppuration. The destruction of bacteria by means of heat and antiseptics is the essence of modern surgery. The resisting powers of the tissues are also to be taken into account; when their vitality is low, either from general or local causes, bacterial invasion is not prevented, and local or general invasion may occur. Mechanical irritations produce a very temporary and slight inflammation, which rapidly subsides. The doctrine of present surgical pathology is that suppuration will not take place if pus-forming bacteria are kept out of the wound, and that if this be achieved, healing will occur without inflammation and without inflammatory fever. Access of germs can be prevented only by absolute bacteriological cleanliness. It is best not to rely solely on absolute cleanliness, which is almost unattainable, but to secure further protection by the use of heat and antiseptic solutions; chemical antiseptics would be needless if absolute freedom from germs was easily obtained. A good deal of unsatisfactory work is done under the names of antiseptic and aseptic surgery, because the simplest facts of bacteriology are not known to the operator. In the Women's Hospital at Philadelphia these principles are fully carried out, and the rules which are laid down for the nurses and assistants are given at the end of Professor Robert's communication. The instruments are sterilised with heat and solution of beta-naphthol 1 in 2,500. Sponges are kept in beta-naphthol or corrosive sublimate during the operation, as are also the sutures and ligatures. The trailing of the ends of ligatures was a fruitful source of error.

PROTECTIVE INOCULATION AGAINST ANTHRAX IN HUNGARY.—According to the yearly report for 1889, drawn up by Dr. Hutyra, the number of animals in Hungary inoculated was 130 horses, 4,401 horned cattle, 26,601 sheep, and 49,303 pigs. The lymph was obtained from Pasteur Chamberland's laboratory in Vienna.

LIVE STOCK IN FRANCE.—In 1889 the live stock on the farm comprised 2,881,153 horses, 234,622 mules, and 376,366 asses. The cattle numbered 13,518,252, which were subdivided as follows:—Bulls, 319,217; oxen, 1,405,399; fat oxen, 508,798; cows, 6,469,460; the remainder being under one year old. There were 21,996,731 sheep, of which 311,769 were rams, 8,990,505 ewes, and 4,133,538 wethers of two years and upwards, lambs between one and two years numbering 3,816,576, and lambs under one year 4,744,343. The pig stock numbered 6,037,743 and goats 1,505,470.

IMMUNITY OF FOWLS AGAINST ANTHRAX.—Dr. K. E. Wagner reports in the *Annales de l'Institut Pasteur*, that he has repeated Pasteur's original experiments of producing Anthrax in fowls by placing them in water and so lowering their temperature, and he has made a number of observations to determine, if possible, how this lowering of the temperature acts. Sutures saturated with spores of the anthrax bacillus were passed into the anterior chamber of the eye of a fowl, and also subcutaneously. On withdrawing the threads at the end of twenty-four hours he found that numerous bacilli had developed, and a few leucocytes had invaded the thread; that at the end of forty-eight hours there were fewer bacilli but many leucocytes, a few of

which had taken in bacilli; at the end of seventy-two hours there were few free bacilli, but many leucocytes and many phagocyte cells containing degenerating bacilli. He concludes that where leucocytes can get access to the bacilli the latter do not retain their virulence for long. An additional proof of this he finds in the fact that when Anthrax virulent to rabbits is injected into the circulation of the fowl it is gradually destroyed much more rapidly than in the subcutaneous tissues or in the anterior chamber. The anthrax bacillus outside the body is gradually attenuated at from 42 deg. C. to 43 deg. C., and is killed in nine days; it does not form spores at this temperature. Although fowls do not usually contract Anthrax, the injection of bacilli almost invariably produces a rise in their temperature of from 1 to 2.5 deg. C.; in one case the temperature rose to 44.3 deg. C. The fever subsides as soon as the bacilli disappear from the blood. The poison appears to act on the nervous centres, giving rise to altered temperature, but the destruction of the bacilli is due, Wagner thinks, to the activity of the leucocytes, which display the most vigorous movements at a temperature of 45 deg. C. to 46 deg. C. He succeeded in producing Anthrax in fowls to which he had administered antipyrin in order to reduce their temperature. Chloral hydrate also paralyses the leucocytes and allows of the production of Anthrax, but not with any degree of certainty. He concludes that the temperature acts not directly on the bacillus but indirectly by increasing the activity of the phagocytic action of the leucocytes; that the bacillus may still preserve its virulence in the blood of the fowl, although it does not produce any symptoms beyond rise in temperature; that where the leucocytes are altered by cold or anæsthetics, etc., they cannot readily get to the points of infection, and the bacilli multiply rapidly, as they are no longer destroyed, and may eventually give rise to Charbon in the fowl.

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## Correspondence.

### CAN IT BE TRUE?

#### An Apology to Mr. Hunting.

We published in our February number a letter from "Anti-Anarchist" headed "Can it be true?" which contained grave reflections on the conduct of Mr. William Hunting while presiding at the annual dinner of the Central Veterinary Society in 1889. In our March number we published a letter from Mr. Hunting denying *in toto* the truth of the imputation made against him. In our April number we published a further letter from "Anti-Anarchist" saying that by mistake he had omitted a word in an important part of his letter, and apologising for the mistake. Mr. Hunting has pointed out that "Anti-Anarchist's" explanation and apology are far from satisfactory or sufficient, as there is no withdrawal of or apology for the remaining imputations contained in the letter, and he has called upon us to withdraw the whole of the imputations unreservedly, and to express our regret for having allowed them to be made in our columns. We have accordingly made inquiries, and have satisfied ourselves that the whole of the imputations made by "Anti-Anarchist" against Mr. Hunting are without foundation, and that Mr. Hunting's conduct at the meeting was grossly misrepresented by "Anti-Anarchist." We have, therefore, no hesitation in withdrawing the charges made against Mr. Hunting unreservedly, and expressing our great regret that they should have been made in our columns. Mr. Hunting has accepted this withdrawal and apology, and has consented to abandon his action against us on payment of a sum of twenty-five pounds and costs to indemnify him against the expenses to which he has been put.

## BOVINE CONTAGIOUS PLEURO-PNEUMONIA.

DEAR SIR,—In reference to the so-called discovery of Pleuro-pneumonia contagiosa amongst American cattle at Deptford, and some observations thereon by the editor of the *Veterinary Record*, in reply to a letter published on the 23rd inst., I have to repeat that I submitted photomicrographs of sections of the lung in dispute, also a section of a Pleuro-pneumonia contagiosa lung; but the editor of the *Veterinary Record*, whilst not giving an opinion of the identity or difference of the diseases represented by those photomicrographs, seems to ridicule the idea that photomicrography is sufficient to determine between Broncho-pneumonia and Pleuro-pneumonia contagiosa.

The photomicrographs in question have been submitted to several veterinarians and medical men, and they all agree that the photomicrographs represent two distinct diseases.

I have no further observations to make, except to express my surprise that the editor of what ought to be a scientific journal should treat such a matter in so flippant a manner, and that he should so expose his ignorance by making the observation that minute morbid anatomy—as demonstrated by careful microscopic work, and photomicrographs produced therefrom—should be of no value in determining the nature of disease. I now send you photomicrographs, printed from the same negatives as those sent to the editor of the *Veterinary Record*, and ask you kindly for your opinion.—Yours faithfully,

*Darlington.* THOS. BOWHILL, M.R.C.V.S.

[So far as can be judged from the microphotographs forwarded, the two conditions represented are very dissimilar.—ED. *V.J.*]

## DISGRACEFUL ADVERTISING.

DEAR SIR,—I beg to enclose you a placard which is widely circulated around this district by an "Existing Practitioner." I am sure you will agree that it outrivals anything yet seen, and being signed by the title of "Veterinary Surgeon" it will tend to lower the profession in the eyes of the public. It surely is high time that the Council should take the matter up and prevent the issue of such disgraceful advertisements by adopting some bye-law as in other professions.

As the "Existing Practitioners" seem to have the power of adding the title of veterinary surgeon after their name, of course the majority of the public imagine that they are properly qualified, and naturally enough they express surprise that advertisements such as the one enclosed are permitted by the Council of the College.

This placard is headed, "*No more Deaths from Castration*," and further down we find that if any animal die from the result of this brilliant (?) operator, the fee will be returned. After a lot of self-praise, this practitioner extols his experience as a breeder, and finishes up with declaring that he is the inventor of a liniment which will perform most wonderful and diverse cures. It quite does away with antiseptic surgery, as there is no cleansing of wounds required by its use. Fistulous withers can be cured, and also Mange and skin diseases, and, finally, it is recommended as an application for Rheumatism.

Next on the placard we have some sire horses advertised, and finally the proprietor places after his name the title of veterinary surgeon. So we find the following combination freely advertised—Travelling castrator, insurance agent for castration, hernia, docking, etc.; patent medicine vendor and manufacturer, and sire owner and breeder.

Now, there is a great deal of discussion at present with reference to pro-

curing a new Charter, etc., but if such conduct in the way of advertising as I have mentioned be permitted by the Council, it is impossible for the profession to hold its proper standing with other learned and scientific professions, and all the changes and alterations—no matter how good—will not be of ultimate service unless some stringent rules as regards professional conduct are adopted.

E. WALLIS HOARE, M.R.C.V.S.

Cork, *May*, 1890.

[We shall bring the matter to the notice of the Council, R.C.V.S.—ED. *V. J.*]

## STRANGLES.

DEAR SIR,—Will you permit me to make the following correction in my paper on Strangles. The statistics have been transposed, and should read as follows:—

Remount Yard, 1889, from 1st January to 31st December.

| Nature of Disease. | No. of which became Roarers. | Proportion per cent. of Roarers. |
|---|---|---|
| Strangles..... | 3 ..... | 4·34 |
| Catarrhal and Laryngeal Affections..... | 5 ..... | 2·38 |
| | 8 | |

Average of horses admitted to hospital suffering from Strangles—three years and eleven months, just under four years. Average number of days under treatment—twenty-nine days. Again, with regard to these eight roarers, three occurred in February, two in April, one in May, one in October, one in September. From this it would appear that the early part of the year is the most unfavourable.

Of twenty-one cases of Chest affections that recovered, *none* terminated in Roaring.

Woolwich, *May 6th.*

F. DUCK.

## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. W. Hill, Hastings; D. C. Pallin, A.V.D., Lucknow; Dr. Ranking, 5th Bengal Cavalry, Lucknow; W. D. Fairbairn, Edinburgh; J. W. H. Ashe, Cork; E. Wallis Hoare, Cork; J. A. Nunn, A.V.D., Lahore; P. R. Gordon, Brisbane, Queensland; H. T. Pease, A.V.D., Lahore; A. W. Hill, London; W. H. Bowhill, Darlington.

BOOKS AND PAMPHLETS: *J. Woodroffe Hill*, Our Canine Companions in Health and Disease; *W. S. Adams*, Scientific and Practical Treatise on the Diseases, etc., to which the Horse is liable; Veterinary Counter Practice; *M. V. Galtier*, Traité des Maladies Contagieuses; *T. Bowhill*, The Identity of English with American Swine Plague; Annual Report of the Board of Live-Stock Commissioners for the State of Illinois; *D. E. Salmon*, Special Report on Diseases of the Horse; Bulletin des Seances de la Société Nationale d'Agriculture de France; Bulletin of the Johns Hopkins Hospital.

JOURNALS, ETC.: *Bacteriological World; Clinica Veterinaria; Recueil de Méd. Véterinaire; Mark Lane Express; Journal de Med. Veterinaire et de Zootechnie; Annales de Med. Veterinaire; Thierarzt; Revue Veterinaire; Auseralasian Veterinary and Live Stock Journal; Wochenschrift fur Thierheilkunde und Viehzucht; Echo Veterinaire; Moderno Zooiatro; Lancet; Repertorium der Thierheilkunde; Journal of Comparative Medicine and Veterinary Archives; Archiv fur Wissenschaftliche und Praktische Thierheilkunde; British Medical Journal; Eainburgh Medical Journal; Practitioner; Lahore Veterinary Journal; American Veterinary Review.*

NEWSPAPERS: *Times; Yorkshire Herald; Freeman's Journal; South-Eastern Gazette.*